

JPRS 81229

8 July 1982

East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2292

FBIS

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ENERGY MANAGEMENT IN CEMA COUNTRIES VIEWED

Budapest HETI VILAGGAZDASAG in Hungarian No 22, 5 Jun 82 pp 4-5

[Article by Gyula Munkacsy: "The Key to the Situation"]

[Text] Energy is expensive! proclaims the television advertisement daily, and the little dog Mengo encourages us to conserve. In most socialist countries, the supply of energy is steady, but tensions occur everywhere.

Conservation of energy is one of today's keys to economic development in the socialist countries. The cost of producing heating materials is rising rapidly, and energy import prices either directly or indirectly limit production. From the viewpoint of general energy conservation, the CEMA countries can be divided into three groups.

1. The situation in the Soviet Union is unique. Although its energy balance is strained, its energy management problems are different from the other countries', since it is a major fuel producer and exporter. The Soviet Union has maneuvering possibilities between home consumption and export of fuels.
2. The use of energy is strictly curtailed in Poland, Romania, and Czechoslovakia, and this naturally affects production.
3. Energy management is fairly stable in GDR, Bulgaria and Hungary. However, these countries are also affected by the concerns of the smaller CEMA countries: the fuel and energy sector draws means for development away from other branches; as a consequence of increasingly difficult production circumstances, the efficiency of fuel production is decreasing; the productive infrastructure is highly energy intensive; and besides all the above, a great deal of inefficient energy use takes place. (The two preceding problems are not identical, however. The energy-intensive productive structure does not preclude a technological sanction for increased energy consumption. The development of such an infrastructure can be markedly efficient and beneficial in countries rich in energy such as the Soviet Union. On the other hand, high specialized use of energy can cover for inefficient conservation.) All these factors increase the price of production in these countries.

Concerning the directions visible in the fuel output statistics of the European CEMA countries, we can say the following: production of Soviet natural gas is increasing dynamically, production of Soviet crude oil, East German brown coal, and Rumanian coal is increasingly moderately, production of Czechoslovak and Hungarian coal remains the same, and Rumanian oil mining is decreasing. Soviet coal production has dropped in the past 3 years, but plans call for considerable expansion. Polish coal output is difficult to categorize, since it suffered sensitive losses in the past 2 years. (Newer reports describe some stabilization.)

The question of how Soviet crude oil production is developing is of worldwide economic importance. The strongly biased Western debates of previous years on the subject have ceased, and the boundaries of possibility are becoming clearer. Apparently, petroleum production in the Soviet Union has not lost its developmental reserves, but at the same time, the possibilities for increased production are severely limited, at least in the near future. Internal consumption is increasing, which reduces export. The Soviet Union can substitute natural gas for oil exports. The possibilities in this area depend largely on the pace of realization of the huge steel pipe-natural gas enterprises which the Soviet Union is in the process of creating with various West European countries.

Soviet plans for energy management call for a significant reduction in petroleum consumption, while also increasing its refinement exploitation. According to the directives, natural gas, coal, nuclear energy and hydraulic energy must supplement petroleum. However, execution of this program is faltering, says the Soviet press, because of deficiencies in the nuclear energy program and coal mining. Soviet press commentators find the cause of this last deficiency in the slow rate of assimilation for new production capacities, the inadequate rate of reconstruction, and the slow acceptance of technological advances by the branch. In addition, the drilling depths are increasing, geological considerations are becoming more complex, and the average quality and caloric value of the coal is decreasing. The press also indicates that the above concerns are also present in other fuel-production branches.

In GDR and Czechoslovakia, fuel production consists mainly of coal. Brown coal is the only form mined in GDR, while in Czechoslovakia it is the main form. The limits of expanding production are firmly delineated in both countries, from both an economic and physical standpoint.

In Rumania, the attained results systematically fall behind planned results in fuel production. This causes confusion in energy conservation and petroleum refinement. The disparities are especially large in coal mining. The 86 million ton goal for 1985 demonstrates the strained plans; if this goal is to be reached, present production must grow to twice its present level by mid-decade.

Finally, how should CEMA countries seek a solution? In socialist countries, the problem is not energy supply, but energy utilization. Thus the basic solution is to decrease specialized energy consumption, to develop a productive structure appropriate to the energy supply situation of each country, and to conserve.

Initial results have already been obtained in this area, but the situation can hardly be called satisfactory. Among the positives is that for instance, in the past year GDR has increased its national income by 5 percent without a significant increase in material or energy consumption. Many CEMA countries are measuredly, selectively developing other energy-intensive subbranches of metallurgy, petroleum engineering and chemistry. Reductions in specialized energy consumption, and energy-conscious systematic reorganization are indispensable to the general modernization of individual economies.

In smaller socialist countries, there is widespread effort to exploit internal energy resources while either relatively or absolutely decreasing imports. However, due to the deterioration of fuel production, this has become a very costly enterprise.

It is a general tendency in CEMA countries to increase the roles of coal and nuclear energy in the energy balance. Bulgaria is in the lead, having developed 20 percent nuclear energy proportion in its total electrical energy output; this is significant even in international comparison.

Production of Main Fuels in Some CEMA Countries

(Coal and petroleum in million tons, natural gas in million cubic meters)

<u>Country and Fuel</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1985 plan</u>
Soviet Union								
petroleum	491	520	546	572	586	603	609	630
coal	701	712	722	724	719	716	704	775
gas	289	321	346	372	407	436	465	630
Czechoslovakia								
coal	114	118	121	123	125	123	123	125-128
GDR								
brown coal	247	247	254	253	256	258	267	290
Poland								
coal	172	179	186	193	201	193	163	-
brown coal	39.9	39.3	40.8	41.0	38.0	36.9	35.5	-
Rumania								
petroleum	14.6	14.7	14.7	13.7	12.3	11.5	11.6	12.5
natural gas (methane)	27.0	29.8	28.8	29.0	27.2	28.2	29.3	31.0
coal	27.1	25.8	26.8	29.3	32.8	35.2	37.0	85.6

Source: national statistics of CEMA countries

Hungarian Statistics

Production and Import of Fuels, in million tons

<u>Fuel</u>	<u>1970</u>	<u>1980</u>	<u>1981</u>
Coal			
production	27,830	25,701	25,942
import	1,986	1,623	1,678
Petroleum			
production	1,937	2,031	2,024
import	4,349	8,336	7,754
Natural Gas, in million m ³			
production	3,469	6,142	5,997
import	200	4,045	4,000
Gasoline			
production	990	2,338	2,361
import	105	613	531
Diesel Fuel			
production	1,948	3,713	3,711
import	298	908	717
Fuel Oil			
production	2,276	3,267	3,082
import	388	92	34

The Makeup of Energy Resources, in percents

<u>Resource</u>	<u>1970</u>	<u>1980</u>	<u>1981</u>
Coal forms	50.1	28.8	29.7
Petroleum and petroleum products	30.3	37.4	35.7
Natural gas	13.4	26.2	26.2
Other resources	6.2	7.6	8.4
Total	100.0	100.0	100.0
The proportion of imports in energy consumption	39.5	54.8	53.5

Consumption of the Most Important Energy Resources in 1980, in percents

<u>Area</u>	<u>Coal</u>	<u>Natural Gas</u>	<u>Electric Energy</u>
Industry	20.7	65.5	55.1
Agriculture and Labor	1.5	2.4	8.0
Transportation and Communications	7.8	1.5	5.6
Population	59.9	14.0	19.1
Other	10.1	16.6	12.2
Total	100.0	100.0	100.0

Source: Hungarian Statistical Handbook, 1981.

9890

CSO: 2500/278

FASTER GROWTH OF INVENTORIES THAN OF PRODUCTION CRITICIZED

Prague HOSPODARSKE NOVINY in Slovak 21 May 82 p 4

Article by Eng Vit Kobora, Czechoslovak State Bank, Kraj Administration Banska Bystrica: "Undesirable Trends Continue in Inventories of Central Slovak Kraj Enterprises"

Tex The disproportionate growth of inventories has long been one of the negative characteristics of the economy, especially in enterprises of industrial production and construction. Inventories are growing faster than is production, the turnover of stocks is slowing down, enterprises are exceeding inventory plans, putting a strain on requirements and resources which is reflected in inability to meet payments. This is carried over to suppliers, creating pressure on credit and the whole circulation of monetary resources is impaired. The following paragraphs will describe the situation in the Central Slovak Kraj and discuss various possible solutions.

Enterprise inventory plans at the start of the year assume the reduction of supplies and accelerated turnover. In the course of the year, however, the same officials who had called for the reduction of supplies are retreating from their positions, yielding to "justified" enterprise demands and inventory plans are amended or increased from quarter to quarter closer to reality, even though there are no reasons for these increases either in costs or increases and changes in the assortment of goods.

The annual inventory plans for industrial enterprises in the Central Slovak Kraj as of 31 March 1981 assumed a reduction of supplies as compared with the end of 1980. The requirements in the plan were justified because in 1980 there was stockpiling beyond planned inventories to a considerable extent. Together with the reduction of supplies there was supposed to be a distinct acceleration in their turnover.

Growth Which is Not Beneficial

The development of inventories in 1981 proceeded as in the preceding years with further growth and at the same time pressure was increasing on higher

officials to make adjustments, that is, raise the plan of supplies and reduce their turnover. The amended plan at the end of the year was Kcs 992 million higher than the original but even this adjustment did not correspond to the actual development and the inventory plan at the end of the year was again exceeded, by Kcs 795 million.

By amending the plans the stockpiling of supplies became a matter of course and gave it the stamp of credit-worthiness. The growth of inventories was thus reflected in the growth of credits which results in raising interest costs and also excess financing charges which in turn are increased by sanctionary interest for excess inventories and penalties for late payment because of a shortage of funds tied up in the excess inventories. The increased need for credits and the resulting interest costs as well as penalties reduce profits. Excess inventories in turn increase the amount of operating assets which results in reduced returns and also smaller allocations to enterprise assets. The effect of increased interest costs and inventory overruns alone caused a 6.2 percent reduction of profitability in the kraj and this, of course, does not indicate the full scale of the negative impact caused by excess stockpiling.

At first glance it would appear that these consequences of excess stockpiling would be enough to compel enterprises to reduce their inventories to their optimal level. Experiences from the first year's implementation of the Set of Measures, however, do not support this even in our kraj. There is a stronger element here which compels enterprises to stockpile supplies without regard to their negative impact on the economy of the enterprise and that is the fear of failure to fulfill the plan which might happen if plans to provide necessary supplies were inadequate.

In 1981 the enterprises were obliged to sort out excess inventories according to State Planning Commission and State Arbitration Office decree No 49/1981 of ZBIERKA. Here too, the enterprises tried to maintain their current stockpiles and the actual sorting out was done so as to have the least effect on the interests of the enterprises. This consisted mostly of attempts of the majority of enterprises to sort out only those kinds of supplies which were in excess of the plan. Certain kinds of supplies, for example, unfinished production or spare parts, objects of gradual consumption, were, therefore, not sorted out in many enterprises. The goods sorted out represent only 2.9 percent of the entire inventories and only 53.7 percent o. the supplies above plan. From a check of the sorting out conducted by employees of the Kraj Administration of the State Bank, it appeared that the volume of stocks screened out should have been at least 50 percent more.

The stockpiling of supplies creates, on the one hand, a feeling of production security, but on the other hand there is the danger of depreciation of inventories which is all the greater the more specific its character requires, a high proportion of single-purpose items and the more they are subject to technical progress, changes in production technology or design and the greater the need for rapid innovation. These are generally enterprises in the engineering and electrotechnical industry where there is also at present the greatest stockpiling of excess supplies. The heterogeneous character of the

inventories is so broad that serious external control is impossible as well as as effective external pressure for reduction if this need is contrary to an enterprise's own interests. The question of optimal inventories is a problem which only the enterprises themselves can resolve and for this proper conditions must be created, an economic climate that would rule out stockpiling.

Experience up to now indicates that enterprises worked hard to include excess inventories in the plans and they succeeded to a considerable degree. That led to legalization of excess stockpiling and their credit-worthiness. In this way the enterprises gained a cheap source of protection, credit on inventories at an interest rate of 6 percent, even in those cases where the stocks were directly or indirectly obtained from abroad. Credit abroad, however, costs three times as much but this pressure does not affect the enterprises.

Problematical Solutions

Banks may increase credit rates by sanctions of 50 percent for uneconomic stockpiling of supplies. It appears, however, that even this increase is not enough of a stimulus. The enterprises do not even have great objections to a 12-percent interest rate for nonpayment of credit on time. In their opinion it is always cheaper than the amount of the penalty for late payment. In the meantime, excluding inventories for granting credit or refusing to credit inventories is the device most likely to affect enterprises that stockpile excessively. It is, however, only a follow-up device, not a preventive, an external, not internal measure to prevent stockpiling over planned amounts.

At the same time, it is generally known that excess supplies are not identical to above-plan supplies because not even planned supplies correspond to optimal supply requirements but are generally a lot higher.

For judging the development of inventories, as a rule the determining factor is development of inventories without labor and deliveries that have not been invoiced. Not even for computing the profitability of operating assets or setting interest rates for credits are any other criteria established, with the exception of preferential interest on credit for certain seasonal and temporary supplies.

From an economic standpoint, however, inventories differ considerably. As long as production supplies are stocks of unfinished production, that is, supplies that are tied up in the production process, their status as such is all the longer the greater the volume of stocks and so they are not available to society. Supplies of finished goods are already in the area of circulation and can meet society's needs whether in relation to domestic or foreign customers.

So it can be said that conditions for the smooth and uniform flow of production and sales are not created by inventories of raw materials and stocks stored up in excess quantities but rather by finished products, ready at any time to meet the needs of buyers and especially to meet them under optimal

conditions for the buyer, that is, not only in quantity, assortment and quality but mainly on optimal terms.

And it is precisely this kind of supply--finished products--that makes up the smallest portion of the total volume of stocks and its proportion decreases with the growth of inventories. At the same time, the ability of the supplier to meet the needs of buyers decreases and the latter are compelled to comply with the supplier's dictates. Times of delivery are extended which brings about a high state of insured inventories. Deliveries come in spurts, not regularly, which has a bad effect on uniformity of production and in the final analysis leads to excessive stockpiling of supplies.

Because finished products are considered the same whether in computing profitability or setting interest rates for credit the enterprises are not particularly interested in finished production, rather the opposite.

In order to create interest in enterprises to produce supplies of finished goods, these would have to be excluded from computations of profitability. Favoring this exclusion is also the fact that finished products are not in the area of production but in circulation and therefore should not be considered as part of operating assets.

At the same time steps should be taken to separate the crediting of supplies in the area of production from those in the area of circulation, that is, finished products. Supplies of finished products, on the assumption that they are covered by sales, should be granted credit at the most advantageous interest rates. On the other hand, credits on supplies in the sphere of production should be subject to substantially higher interest rates (without regard to the plan), rates that would approximate penalties for late payment and would make it impossible to shift the results of poor management in stockpiling supplies to the suppliers and in the end to the credit system. A definite interest differentiation and changes in the computation of profitability of operating assets could thus become preventive and not just after-effects for preventing excess stockpiling of production supplies and their gradual depreciation.

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CSO: 2400/275

MARCH ECONOMIC RESULTS EVALUATED

Prague HOSPODARSKE NOVINY in Czech 30 Apr 82 p 2

[Commentary by Dr Eng Vaclav Cap, ScC, Federal Bureau of Statistics: "March 1982"]

[Text] When evaluating economic development in March and the first quarter of the current year, it is important to consider the conditions that developed during the preceding period and affected the first quarter, most of all the high prices of imported raw materials, materials and particularly fuels, whose rise substantially outpaced the price increases of finished goods for export. In addition, obstacles in foreign trade have been unilaterally imposed in recent months by certain capitalist states.

Moreover, the costs of production of domestic fuels and raw materials rose. In agriculture last year's lower harvest affected the steady development of livestock production and the food industry. The need to rationalize capital investment in particular to reduce the number of projects under construction was reflected in a lower demand for construction works and subsequently in lower production of construction materials. The economic policy specified in the 1982 plan allows for this situation. It envisages less dynamic development, which will restore the balance of foreign trade even at the price of lower imports of raw materials.

If we consider these principles of the plan for the current year, which are expressed in fundamental, albeit simplified, terms, it follows from the results of January through March that the stipulated line has been fulfilled in general. With a slower rate of development the structure of our economy has begun to change, economic relations are improving and opportunities for a more dynamic development in the future are being created.

The main way to achieve the outlined economic objectives should be better efficiency and quality of all work. Their fulfillment thus far may be assessed only on the basis of indirect, partial characteristics. Nevertheless, already it appears that this will be a particularly taxing task because it calls for a change in the thought and action of everyone, especially the managers.

The results in foreign trade indicate that the opportunities for trading with the capitalist states have further deteriorated and that a shift toward a more

extensive exchange of goods with the socialist countries is taking place. If we consider the experience of the 2 months alone, the adjustment of retail prices resulted in changes in the structure of demands for meat and dining out.

The 1982 state plan on the whole has been fulfilled in the first quarter. During March there was one more working day than in March 1981; industrial production was up 3.1 percent and several sectors of production made up for the shortfall in production during the first 2 months of 1982. Nevertheless, 26 percent of all industrial enterprises failed to meet their planned production tasks. As compared with the targets of the state plan, in the first quarter production dropped especially in sectors with a particularly high consumption of fuels, energy and raw materials. Electric power generation was down 0.3 percent due to an overall reduction of energy consumption in our industry; during the first quarter the production in ferrous metallurgy was down 2.6 percent (the annual plan envisaged a 2.5 percent reduction) and in the industry of construction materials down 3.7 percent (the annual plan envisaged a 0.6 percent reduction).

Contrary to the planned 1 percent reduction in the chemical industry for the year, production in the first quarter was up 1.6 percent. The production in the food industry was 3.9 percent below that of the first quarter of 1981 due to lower procurements of slaughter animals and milk. On the other hand, the production in engineering industry was up 3.2 percent and in the light industry, up 1.5 percent, in accordance with the plan. New installations in the wood-processing industry have failed thus far to operate at full capacity; thus, the 1.1 percent increment in production falls substantially short of the annual plan.

Production in most industrial sectors was less dynamic than during the preceding year and therefore managers and administrators must focus on high technical standards and quality of goods, in most cases without reducing their work forces. We cannot be satisfied with the current standards, although last year 16 percent of our products achieved high technical standards (less than 13 percent in 1980). Furthermore, the process of innovations improved, since 10.1 percent of all products in 1981 were new products (9.4 percent in 1980). Changes in the line of goods must go hand in hand with the implementation scientific and technological progress and with basic structural changes in production.

Marketing results in the first quarter prove that there has been an apparent upturn in that direction; however, our economy demands even faster and more resolute approaches to their fulfillment. In the first quarter the deliveries for exports to the socialist countries increased by 9.8 percent in wholesale prices over the same period in 1981 and exceeded the planned dynamism, while the deliveries for exports to the nonsocialist countries increased by no more than 3.1 percent; in other words, at a slower rate than the annual plan had envisaged. The situation in exports developed accordingly.

Exports to the socialist countries in the first quarter rose by 10.1 percent and to the nonsocialist countries declined by 6.7 percent. Exports to the

nonsocialist countries have not been fulfilled partly because of the administrative restrictions on our exports imposed by those countries, consequently, goods are being exported to socialist countries. (Imports from the socialist countries have risen 4.5 percent and from the nonsocialist countries declined 25.7 percent due to the austerity in expenditures of hard currency.) Deliveries for our domestic market dropped in the first quarter below the level of the same period of 1981. A more tangible problem stems from the fact that the line does not always satisfy consumers' demands because production and trade are not flexible enough

The favorable development in the dynamism and fulfillment of the plan for adjusted value added in our industry over the 2 months indicates that the trend toward reducing material consumption and focusing on less material-intensive production of goods continues.

Despite certain improvements in March, the construction enterprises have not met their plans. The volume of construction production was 9 percent below the first quarter of 1981. The annual plan had envisaged a 4.2 percent cut in production. The consequences of its nonfulfillment and of the nonfulfillment of certain deliveries of machinery and equipment are reflected already in the failure to meet the deadlines to begin operation in the planned mandatory capacities.

In agriculture the plan for the procurement of slaughter animals was exceeded in the first quarter by 2.4 percent but the planned tasks in the procurement of milk have not been met. Cattle decreased slightly in number over the first 3 months and reached approximately the same level as last year; the numbers of hogs slightly increased after a drop of 1/10 in late 1981.

Following a gradual increase of dynamism, the financial income of our population in the first quarter was 2.3 percent higher than in 1981. Retail sales in the main trade systems in March increased rapidly after their decline in February and in the first quarter were already up 3.7 percent. The savings of our population continued to rise in March, to the amount of Kcs 170.3 billion at the end of that month; ready cash in March was lower, amounting at the end of that month to Kcs 44.7 billion.

Basic Indicators of National Economic Development in March 1982

Increments over Comparable 1981 Period (in Percentages)

	Mar.	Jan.- Mar.	State Plan ¹
Deliveries of the Centrally Managed Industry for:			
--Investments at wholesale prices	-	6.3	-11.9 ²
--Domestic market			
at wholesale prices	-	- 0.1	- 0.3 ²
at retail prices	-	- 1.4	1.6 ²

	Mar.	Jan. - Mar.	State Plan ¹
--Export to socialist countries			
at wholesale prices	-	9.6	2.6 ²
at FOB prices	-	11.1	4.7 ²
--Export to nonsocialist countries			
at wholesale prices	-	6.0	4.6 ²
at FOB prices	-	- 1.3	6.7 ²
--Other sales for industrial production and operations at wholesale prices	-	0.5	-
Volume of industrial production	3.1	0.4	0.6
Average number of employees	0.7	0.7	0.3 ²
Labor productivity based on industrial production	2.3	- 0.3	0.3 ²
Construction			
Construction work performed with internal labor resources	- 3.0	- 9.0	- 4.2
Average number of employees	- 0.8	- 0.8	- 0.8
Labor productivity based on construction work	- 3.2	- 8.3	- 3.5
Housing units delivered by contracting enterprises	106.6	92.6	11.1
Procurement			
Slaughter animals (including poultry)	0.5	- 4.6	- 9.5
Milk	- 1.0	- 1.8	0.2
Eggs	4.5	- 1.1	- 0.2
Retail Turnover of the main trade systems	6.0	3.7	4.2 ³

	Mar.	Jan. - Mar.	State Plan ¹
Foreign Trade³			
Export to socialist countries	- 1.3	10.1	5.0
Export to nonsocialist countries	-17.6	- 6.7	7.5
Import from socialist countries	-20.6	4.5	11.9
Import from nonsocialist countries	-37.9	-25.7	4.2
Personal Earnings⁵	3.4	2.3	4.9 ⁶
of which: income from wages ⁵	2.0	1.1	3.2
Actual cash expenditures ⁵	4.2	2.5	4.3 ⁶

FOOTNOTES

1. Increases compared to actual 1980 results.
2. Increases compared to expected 1980 results.
3. All trade systems.
4. Data on actual results refer to actual transactions; and the state plan (in contrast to overall actual results) does not include unplanned actions within the framework of cooperation, unplanned reexports trade, exchanges and conditional trade transactions, etc.
5. Data calculated according to the treasury plan of the SBCS (CSSR State Bank²).
6. Including estimated interest on loans.

9004
CSO: 2400/237

PROSECUTOR CRITICIZES AGRICULTURAL PRACTICES

Bratislava NOVE SLOVO in Slovak 20 May 82 p 7

[Article by Milan Valashik, county prosecutor, Greater Bratislava: "Law in Agriculture, A Useful Inspection in the Outer Bratislava County"]

[Text] Analyses have shown that like other countries with intensive agriculture, there are objective causes in Czechoslovak agriculture which lead to the growth of production costs, and decrease of profitability and weaken the khozraschet positions of individual agricultural cooperatives and state farms. In 1980, 56 percent of the enterprises in Slovakia managed their economy with minimal losses and profit. Therefore, measures were adopted to better cover the agricultural replacement costs from the resources of the entire society to achieve an average of 10-11 percent profits from the agricultural production throughout the country and, at the same time, to resolve the unjustifiable differences in the profitability of individual agricultural products.

Apart from objective causes, however, there are also subjective causes for the differences in the economic results. One of them is also the violation of socialistic laws. The inspection carried out at United Agricultural Cooperatives and State Farms in the Greater Bratislava County showed several surviving examples of this violation, such as insufficient fencing of farm yards, construction material and agricultural chemicals stored outside and easily available to anybody, agricultural machines and vehicles parked outside guarded areas and buildings and insufficient supervision over vehicles which are often used for private purposes. Growth, utility values and changes in the number of farm animals are not recorded sufficiently, stock and supply files such as receipts, issuance and transfer certificates and stock cards are also inadequate. In and out checks of trucks are not performed well either, which makes possible illegal transportation of various materials. Insufficient attention is being paid to adhering to the law concerning the protection of agricultural field fund, although there has been improvement since 1980. Agricultural organization managements still underestimate this problem. There should be one worker in every agricultural organization entrusted with the protection of the field fund, particularly in integrated United Agricultural Cooperatives and State Farms; all these problems should not rest only on the agriculturalist. Moreover the person who has been entrusted with the protection of the field fund, should not be given other work. Every agricultural

enterprise is obliged to keep detailed records about soil in accordance with land records and existing natural conditions. Physical surveys of land showed that not even a single agricultural enterprise had its land records in order. These records must receive systematic attention, the ascertained discrepancies must be put in order and, above all, the land fund records must be compared with those of the geodesy center every year, to avoid repeating errors from the past, when the geodesy made changes particularly inside the land fund without notifying the user.

Many enterprises do not pay sufficient attention to proper use of the land fund. They have the right to use land in the cooperative. The land is recorded as being used by them, however, the land is actually being used by private individuals (either those who purchased the land from original owners or the original owners themselves)--Jur pri Bratislave, Modra, Stupeva. In several places, summer houses have been built on cooperative land, either legally or illegally. For example there are about 600 users of agricultural land at Badogy in Modra. Present users purchased the land from original owners or their heirs despite the fact that the land from original owners or their heirs despite the fact that the land had been registered as the property of United Agricultural Cooperatives and is still recorded as being "in use" by the JRD Modra. Summer houses have been built there although it is not an approved recreation or a gardening area. Some cases of willful occupation of land which had been in the use of United Agricultural Cooperatives were also discovered; the land was added to private gardens (JRD Lozorno).

Existing farms have been built on large areas and many of them, due to the integration of individual United Agricultural Cooperatives, do not serve their original purpose any longer and are overgrown by weeds.

There are numerous shortcomings also in the area of environmental protection and water system development. These shortcomings result from the methods of the construction of the facilities as well as from negligence and insufficient supervision in using oil substances and other pollutants.

The problems of water protection in the Zitny ostrov (Rye Island) constitute a specific category. The intensify of the agricultural production there is not in agreement with the directions and regulations of the government of the Slovak Socialist Republic concerning the protected area water reservoirs in Zitny ostrov. In endeavoring to secure the planned tasks--mainly in the production of meat and milk--it is almost impossible to uphold the basic regulations concerning the permissible number of animals for individual farms. The objectives can be achieved only after the production plan has been adjusted (particularly for the JRD Dunajska Luzna) or by changing the basic orientation of the production into exclusively plant production and assigning the animal production to other agricultural enterprises, which do not have to be concerned with water protection.

It has been discovered that the responsibility for safety and health protection at work has not been assigned to anyone at any of the organizations inspected. This is a violation of appropriate regulations and the Work Law Code. Records and registration of work accidents are incomplete. No set

supervision methods were found in the accident records. Regular checks and inspection of technological equipment are not performed. To be specific, a number of shortcomings were found in arc welding. Coworkers are not protected against radiation, welding equipment is not protected against weather and accidental human contact, nor is it regularly inspected.

All organizations show a great number of shortcomings in metal machining, operation of road vehicles. The worst working conditions were found in assembly pits. In the JRD Modra, the Pexinok Machine and Tractor Station and the Agricultural Machine Repair Shop in Ivanka pri Dunaji, unsatisfactory technical conditions of electrical equipment were found.

About 50-60 defects, very often serious ones, were found in medium and large agricultural organizations; many of them have a common denominator: a low level of knowledge of legal regulations and norms concerning work safety and health protection. It is also necessary to point out that according to statistical data, the number of occupational illnesses in agriculture grows every year.

Although upholding the laws in agriculture in the Greater Bratislava County has improved substantially in comparison with the past, many problems of both objective and subjective nature continue. Therefore, managers and supervisors responsible for adherence to the law in individual areas of activity evaluated the present conditions at their enterprises. They adopted various measures to eliminate the present defects and to deal with problems according to present legal regulations.

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CSO: 2400/265

ACCELERATED ROBOTIZATION IN INDUSTRY URGED

Bratislava PRAVDA in Slovak 21 May 82 p 3

[Article by Frantisek Zdobina: "Robots Are Knocking on the Door But Do Not Beg"]

[Text] It is not easy to come up with an article about robots with a title more attractive than the one printed--for example, "Robots Knock on the Door but Barely," "Robots Crossed the Threshold of the Present," "Robots--Illusion and Reality." It is often mentioned that the word "robot" was coined by the Czechoslovak writer Karel Capel. He did not coin a new word, as tradition would sometimes have it, but a neologism derived from the term "worker," which originated in the older Slavonic expression "robota," the Slovak "robotnik" and the Russian "rabochiy.

Even history was pressed into service in the popularization of robotization. Actually, from the days of Greek mythology mankind coveted a mechanical man that would carry out on their behalf certain tasks. But as soon as robots made their appearance, some philosophers in the West saw in their ascendancy the beginning of the end of mankind, because one day they will surpass man in the ability to learn and destroy him. These murky visions do not scare us; we know from which direction the wind is blowing.

With the ascendancy of robotization, production is acquiring a new technological base and that, in a social system based on exploitation, will increase the pressure toward creation of new relations in production. "It is on the whole impossible and contrary to nature," we cite Soviet scientists, "that robots could become a means for oppression and exploitation. By themselves, as manmade objects, they cannot play a social role even if they were close to being perfect."

In the communist form of society, comprehensive automation (of which robotization will be a part) represents the type of organization of production that meets the needs of liberated labor. Every significant change, and the area of production is no exception, brings about a tendency for exaggeration. Robots inherited this at their conception only because we became accustomed to transforming them into the human image. In reality they are machines, sometimes even ugly. They resemble humans about as much as angels with wings on their backs resemble today's airliners.

Everywhere and without Fatigue

The predecessors of robots were relatively simple manipulators. They made their appearance in the latter half of the 1940's and somewhat resembled cranes. Today we designate as industrial robots complicated systems with a certain number of work operations, programmable and equipped with a handle or a tool. The sequence of motions and changing positions is programmed, so that a robot is a versatile device.

A robot is tireless. It works in media that humans cannot stand; work at night poses no problem for it; and, depending on their design, robots can be used in practically any sector: on earth, in space, under the ocean.

They are machines, for all their advantages. Several years ago they were counted in the hundreds; today tens of thousands of them operate in industrially advanced countries--and their numbers will grow. Interest in them is increasing, also in our country. Participation and attendance at the Brno exposition ROBOT 78 exceeded all expectations. Let us hope that domestic interest in robots will persist, because, as we will show, we will need them as allies against certain conservative trends. Robots bring about changes and we must be prepared for them so as not to lose time and also to overtake what has escaped us so far.

Onset of Mass Utilization

A coordinated and systematic research and development of robots and manipulators commenced in our country in 1975. Its concept was based on the significance and nature of the Czechoslovak machining industry. As a high share of it is characterized by piecemeal and small-series production, it was correctly determined that further advances in automation of Czechoslovak machining will depend on flexibly programmable and expediently adaptable production and manipulation systems. Support for this role was expressed many times. The key directions of economic and social development for the current five-year plan, adopted by the 16th party congress, directly require further research and development on "implementation of a higher level of mechanization, automation and robotization of integrated production processes, lines and sectors," calling on general engineering specifically "to develop production of robots and manipulators." The pressing nature of this task is brought into even sharper focus when related to the intent of increasing the productivity of labor in machining by 30 to 32 percent and its obligation to meet demanding export tasks.

And What Is the Situation at the Moment?

The answer can be found in documents of the federal government. Last December the CSSR Government discussed the concept of development of industrial robots and manipulators. As concepts must be based on wider relationships, it emphasized in its introduction that we cannot afford to lag behind in robotization, because robotization is a scientific and technical orientation that is rapidly progressing worldwide and its use is constantly widening. The key area determining the extent and the rate of robotization is automation of technological and production processes. The government determined that "in the CSSR now exist the basic prerequisites for systematic technical development of industrial robots and manipulators and the foundations are laid for its production base." Czechoslovak needs in this respect were expressed in the State Goal-Oriented Program 07.

This goal-oriented program envisioned producing approximately 3,000 robots and manipulators by 1985. This would represent a manpower savings of approximately 5,500 workers. By 1990 the number of robots and manipulators was expected to increase to 13,000 and manpower savings to 25,000.

However, the government was not fully satisfied with the proposed concept. It stated that capacities for developing the production of industrial robots and manipulators and deliveries for final assembly of production lines failed to materialize to the requisite extent. It requested that the concept be improved with the objective of "intensification of the development of industrial robots and manipulators." That, in a word, was a suggestion that all those who have anything to do with robots and manipulators step up their efforts.

A new report on the progress of redefining more accurately the program for production and utilization of industrial robots and manipulators in the years 1983 through 1985 has a bolder tone. The number of produced and utilized industrial robots and manipulators has been increased from 3,545 to 4,143. For the period of the subsequent five-year plan, preparations are made for the mass utilization of this technology.

The developmental phase in our country has already been concluded, or will be concluded by 1985 at the very latest, involving 12 types of industrial robots, 11 types of industrial manipulators and 5 types of manually operated manipulators. The birth certificate of robots will list not only weight but also carrying capacity--up to 160 kg for robots and up to 250 kg for manipulators. They will be used in machining at points with the most occurrence of manipulatory or technological operations, mainly handling semifinished products and workpieces in machine tools and forming machines; they will operate pressurized and casting machines for the processing of plastics; they will do resistance and arc welding, provide surface finishing, etc. Robots of a higher carrying capacity will be imported, preferably from CEMA countries.

This article could continue with a discourse about how one day our robots will teach themselves to correct mistakes done by humans. But we had better keep both feet on the ground. Technical advance does, as in this case, make from time to time a leap forward, but after an innovation of a high

order, things progress very slowly, step by step, and with it increases the value of endurance.

What Are Our Robots Like?

They already are, figuratively speaking, capable of life but some of their properties still must be improved, such as precision of positioning and improved manipulation performance. More reliability is also called for; after all the level of robots is judged mainly by the length of operational time before developing a medium defect. Leading world producers guarantee 2,000 consecutive working hours. Further development of robots in the CSSR must also be oriented in this direction.

The key position in the research and development of robots and manipulators in our country is occupied by the well-known Research Institute of the Metal-Working Industry in Presov (its first robot was used in 1978 in the automobile production plant in Mlada Boleslav). Significant coresearchers are the Research Institute for Machining Technology and Economy in Prague, the Research Institute for Mechanization and Automation in Nove Mesto nad Vahom, the Research Institute of Welding in Bratislava, institutions of higher learning with a technical orientation in Prague and Kosice and scientific research institutes of robot and manipulator producers.

In the next five-year plan the technical development of robots and manipulators will be oriented toward development of higher generations of intellectual robots, more extensive standardization and unification as well as robotized technological lines, operations and plants. Additional facilities, including the Institute of Technical Cybernetics of the Slovak Academy of Sciences, are participating in this task.

Production will be handled by 21 manufacturing organizations. Among the larger producers in volume and number of types are, in the first place, VUKOV, the Industrial Automation Plant Presov, Vihorlat Snina, Heavy Machining Plant Kosice and selected plants of the concern Machining Technology Plants Prague.

Why is the strongest base for production and development of robots and manipulators located in Slovakia? Chance is a priori excluded in making decisions about such important problems. Let us first credit the efforts of the Research Institute of the Metal-Working Industry in Presov and its director, Eng Vladimir Cop, CSc. In this institute a highly qualified team originated enthusiastic about technical innovations, which, at a time when more was said than done about robots and manipulators, carried out research and development and built prototypes. The young researchers and developers let no difficulty stop them. It is primarily to their credit that we have a series of robots that we can follow up and keep expanding. Eng Josef Benes, head of a department in the Federal Ministry of General Engineering that deals with problems in the development of the machining technology sector, gives high praise also to help from the Slovak Academy of Sciences and the Technical College in Kosice, which on their own initiative started courses in robotization and trained highly qualified specialists.

Thus, there never was a lack of enthusiasm and it is not lacking now. If it could be fully developed, we would have advanced further in robotization. Regretfully, even in this particular case barriers appeared, acting as brakes, between the individual stages of the cycle from research to utilization.

We Must Produce Them

These barriers are of a somewhat unusual nature and for that reason we must devote more attention to them than to those long since uncovered and surviving. At the end of this five-year plan we should be producing 23 types of robots and manipulators, but for not a single producer will production of robotization equipment be the main production program. In other words, production of the most advanced technology in the plants mentioned, and in others, will be merely supplementary production. The fate of supplementary programs is common knowledge. As times goes by, they tend to lose most of the attention of producers and their superior authorities. When time comes for accounting, both parties claim that they had to give priority to their key tasks, operational tasks, because the latter are the criterion for their evaluation. The Set of Measures does try to inject into the decisionmaking process the principle of long-term outlook, but in the area of technological development its effects are weak for the time being; for that reason we must insist that priority be given to societal interests ahead of those of agencies and plants.

On the other hand, some experts claim that concentration of the production of robots is ill-advised. According to them, it would be better to emphasize that enterprises and plants with the requisite conditions construct the robots by themselves. Special producers would just supply them with key assemblies, uniform parts and components.

One way or another, there can be no relaxation in the attention paid to robotization. Now the time has come to ponder whether it might not be better to avoid these and other difficulties and simply stop developing and producing robots and manipulators. After all, we cannot keep pace with the world in everything.

We must produce them! In the period of preference for the intensive development of the national economy, the prevalent argument in favor of robots was a lack of manpower. However, that was a one-sided argument, if not superficial. Along with robots is primarily growth of productivity; adding a cultural dimension to labor, which comes first, if we want to continue exporting automated production and technological equipment, it will be inevitable that some robots must be tailored to specifications. After all, a robot is not some machine standing in isolation but supplements, completes automation, because it takes over manipulatory tasks and manual technological operations. New technology simply cannot do without robots.

The discussed problem and solutions were very aptly commented upon by the director of VUKOV, Engr V. Cop, CSc, when he wrote, "We are aware that we cannot keep pace with the world in all aspects. The Czechoslovak electronic

"industry even more must engage in cooperation, specialization within CEMA, especially with the Soviet Union. And what VUKOV preaches, it does. From the outset it has been cooperating with research institutes in Moscow, Odessa and Voronezh.

Starting Conversion of Industry

Data about the advances of robotization in the Soviet Union are imposing. Its extensive scientific and technical program envisions growth in its inventory of robots to be almost sixfold by the end of the 11th Five-Year Plan. On the agenda are even whole automated plants. Findings by the Soviet Union are of even greater importance to us, because simultaneously with robotization it is studying changes in the social and professional structure of the workers' class, introduction of new professions and the development of a new type of producer whose activities combine in harmony physical and mental efforts.

Just now a new opportunity developed for establishing closer cooperation and specialization that we should not miss in any case. The CEMA Council for Scientific and Technical Cooperation recently discussed a preliminary project for a general agreement regarding multilateral cooperation in devising and organizing specialized cooperative production of industrial robots. The council's chairman, Academician Marchuk, in response to an APN query regarding the significance of the project, emphasized that "it is the start of embarking on an important path, the path to conversion of industry."

On this path we should be among those who march in the first ranks. In our country initiative must be developed by all those who have anything to do with robotization, we should develop active participation in preparation for the Board of Principal Planners and Designers, which will devise a uniform concept, technical requirements and nomenclature of robotization.

Price Must Not Be an Obstacle

Robots, sticking in this case to allegoric language, are knocking at the gates of factories as an omen of the changes in production forces. They still only knock--and experts at the Federal Ministry of General Engineering, which together with the federal ministries for technical and investment development and the electrotechnical industry bear the brunt of responsibility for the development of robotization, are already pointing out that "utilization of robot technology appears to be one of the most vulnerable points in robotization of production processes in most sectors."

We could ignore this warning by pointing out that something similar happened in the case of numerically controlled machinery. Factories were refusing them at first, and now they are calling for them. But this time the situation is more momentous. The situation at home and on the world's markets requires that everywhere and from the very start doors be kept wide open for robots.

It is known why robots are sometimes not welcome. Their price is quite high. Let us add that this problem is also being dealt with. The government

directed the Ministry for Technical and Investment Development to supplement the uniform methodology for evaluation of societal and economic effectiveness and substitution of live manpower in the production process by robots and manipulators into the nationwide valid methodology for evaluation of investments. Even in other industrial countries the ascendancy of robots was hampered by their high initial price. Production of robots in larger series, which would also make them cheaper, should be brought about by the mentioned international typification and unification within CEMA, uniform modular design and systematic international specialization. The clash between societal and enterprise interests could be minimized in this way.

But nobody has the right to wait for all that robotization in the end will force to come about. After all, new ideas should be met halfway with creative conditions for the development and utilization of robots every desirable place. Planners should count on the approaching utilization of robots, and designers should plan their design with the awareness of their incorporation into the technological process.

Examples of such initiative are provided mainly by research institutes. In Presov they stage workshops about robotization; much initiative is also developed by the scientific and technical society. But that is not enough. Transition to a new level of technology presupposes great organizational efforts at practically all levels. Robotization must include not only research and development but also production and all those who will be introducing the robots.

A Great Incentive

We do stand a chance of robotization. Scientific and technical efforts in this context are of a high level, we are gradually reducing certain lags behind worldwide development, we developed a relatively wide assortment of industrial robots and manipulators for present and future utilization, and we actually "pulled ourselves" to one of the leading positions in CEMA.

But let us repeat once again: one sector alone cannot aspire to meeting the level of needs by its own resources. Responsibility accrues also to other ministries, economic production units and enterprises. Thus, the State Goal-Oriented Program 07 justifiably requires that it be "expeditely reflected in all plans for the national economy in the entire cycle research, development, production."

Should someone think that he is being asked for some kind of favor, he is sadly mistaken. Robots are knocking on the door but they do not beg. They do not have to, because:

--One robot represents the savings of 1.6 to 2.5 workers;

--Thanks to robots, the productivity of labor increased 20 to 30 percent per shift;

--Utilization of production machinery increased by 10 percent due to auxiliary and idle times and by 50 percent thanks to the fact that a robot permits operation of machinery for two to three shifts;

--The robotization program permits up to a twofold increase in the kilogram price of machinery and systems for exports.

Isn't this a truly great incentive?

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CSO: 2400/26%

CRITICAL ANALYSIS OF SELECTING MANAGERS SUPPORTS NEED FOR PRAGMATIC APPROACH

Budapest TARSADALMI SZEMLE in Hungarian No 5, 82 pp 52-62

[Article by Lajos Hithy, director of Research Institute for Labor Affairs: "Economic Tasks of Our Days and the Leadership Incentive"]

[Excerpts] According to Lenin's concept the decisive element of socialist leadership activity is the organization of the masses--which is a creative function that brings about and establishes the new--and in comparison, leadership itself is secondary: a function that operates, protects and maintains. In our times it is particularly important to refer back to this Leninist idea, for to meet the requirements of socio-economic development this is a process in which a decisive role falls on managers with initiative who can create new things and which cannot even move ahead without such leaders and leadership activity.

In relation to the growth of economic difficulties and the increased need to react, it therefore repeatedly happens that the question of leadership and managers is in the forefront. Today there is hardly anyone who would dispute that our economic difficulties--beyond the unfavorable shifts that have occurred in the world economy--can be ascribed to those inadequacies which have accumulated in our economic work, among other things in the work of managers who are also in the center of this field. While doubts are cropping up in public opinion about the activity of certain managers, the work they perform, and even their suitability, and changes are being urged, even deeper and more comprehensive questions than this are agitating social science research and political decision making. To what extent do social organizational relations, including the interest relations that have developed--make it possible, or compel, managers to work for society in accordance with requirements of our socialist development, among other things in the interest of overcoming economic difficulties and according to the imperatives of their requirements? To what extent does the creation of incentive, the most important means available to the management of society, assure that managers will work in this direction?

Interpretation of Managerial Incentive

Nowadays we have been accustomed to narrowing incentive to material incentive, which is basically justified in the case of most social groups and thus

also in the case of managers by the degree of development of our socio-economic relations as they have historically developed, the structure of demands, and the level at which they are met. At the same time, the managers form a unique social group: it is not only the unique functions they perform in the organizations and society as a whole that raises them from society as a whole, but also--accompanying this--their higher education, qualifications, political training, and not least of all the favorable position they enjoy in the distribution of material benefits, which means a higher level of living than for many other social groups, higher income, better provision with the means of material consumption, and hence in the final analysis the satisfaction of material needs at a higher level than for others. Thus in addition to their material needs other needs may also be emphasized. Therefore, it is not only a narrow but in the final analysis a mistaken scientific approach to limit the incentive of the managers to material matters and to study it in the dimensions of basic wage, premium and bonuses.

As an alternative concept, a broader scientific overview suggests itself: this extends to the consideration of all those material and nonmaterial type of organizational-social factors which can be developed by social management and may be considered important from the viewpoint of meeting the needs of the managers.

The Conditions of Management, Enterprise Interest and the Action Plan of Managers

There is no direct transmission between the requirements stemming from socialist social development and economic progress and the action of the people and managers active in the managing organizations. This indirect relationship, which is the central subject of this analysis, is given by those organizational-social relations, including the economic relations, created by society but appearing today to people as objective features which motivate, make possible or obstruct actions by individuals or groups in this or that direction (promote or stall development). It is the particularly important and unique function of the leaders to develop relations within the organization (in some cases, although more rarely, also the formal framework of the organization) that are in accordance with the new situation; this is made possible by the position they hold in the organization and the means that accompany it. The independent movement of the organization is manifested primarily in the actions and decisions of the managers. With some simplification, we may say, therefore, that the enterprise's area of mobility is identical with the manager's area of mobility, and the socio-economic influences which shape the actions of the enterprise and determine its interests are those which at the same time influence the activity of the managers and determine their interests.

But since today material-economic interests, deriving from their socio-economic development level, dominate in the actions of people who work at the enterprises, the enterprise interests (as in a certain sense the summation of individual interests) must have a decisive material-economic content. On this basis the proper recognition was born that the action of

the enterprise collectives, including the managers, may best be linked into the social unity serving the interests of the economy and society if we create appropriate incentive relations proceeding from their material-economic interests. This is how the so-called profit incentive was born with economic reform at the end of the 1960's, which was called on to assure that the individual enterprises would enjoy material advantages or suffer sanctions in ratio to their contributions to the successful development of the national economy. One of the much debated questions of recent times is to what extent has the incentive built by central regulation in profits and in final analysis in effective management been built into actual enterprise interest and into the actions of the enterprise collectives. Is the profit incentive able, and to what extent, to create interests that stimulate the collective to efficient management?

Our socio-economic relations (including the conditions created by central regulation) have in the past decade and half not only failed to promote this but have expressly obstructed it a good many times. To this date there is no reliable criterion system that would make it evident to society, the central guiding organs, and not least of all to the workers (managers and subordinates) themselves to what extent the activity of a given enterprise (collective) is economic, successful, and profitable to society.

Nor was this reflected in profit development because this index depended on a series of factors outside the actions of the collective (past developments; various elements of central regulations, for example, the formation of prices; the proliferation of individual supports in the economy, and so forth), and they proved to be manipulative by the enterprises.

One of the interests of the enterprise and accordingly of the enterprise collective is continuance and survival. For this, most enterprises in our society must achieve a certain level of management efficiency; few enterprises could have permitted, without the risk of external intervention, that the management results (at least according to valid indexes) should deteriorate, and in fact it was their well-considered interest that it should improve to an average extent. Despite the central guidance and above all the contradictory conditions created by the earnings regulation, it was in the interest, and still is, of the enterprise collectives (and particularly of the managers) to produce one kind of management results. In addition to the guarantees of disputable results in material incentive, it was also promoted by such conditions as political-social pressure on the enterprises as embodied in the demands of the highest authorities, the appropriate party organs, and the workers' collectives. Of course, this did not by any means represent, nor does it now, the exploitation of the possibilities and reserves of the enterprise, merely the extension of one kind of acceptable achievement as compared to the "base," and what is equivalent thereto in the base incentive system: holding back a significant part of the possible achievement.

To the extent that we regard the economic managers as the primary carriers of enterprise interests, it may be said that those motives which prescribe as an

imperative necessity the **most successful and most efficient enterprise management** possible did not prevail, could not prevail, in their actions.

The Managers' Material Incentive System

According to their own statements, managers frequently do not ascribe primary importance to their material payments: they work, they say, for "Sport," "honor," "duty," and so forth. This approach by no means makes it unnecessary that we weigh very seriously the question of material incentive, for its existence or absence leaves its imprint, in any event, on the activities of the managers, independently of how it is brought to their consciousness and in what kind of ideology it is conceived.

The devaluation of the material elements of incentive stems from the fact that society, as we shall see, has been even less able to establish for managers wage differences and wages with an incentive effect than for other groups, and related to this, it is even less able to tie the earnings of workers to achievements and to their work performed. Thus we are not speaking of some kind of outstanding sense of calling (although we may at times be witness to this as well) or some glaring affluence that would de-emphasize material incentive, but of the inadequate nature itself of the material incentives created for **managers**.

The material incentive system for top enterprise managers is worked out by the central guidance organs, and the superior authorities of the enterprises (or other organizations) operate it. The present system, which has been functioning with minor modifications since 1976, is made up of two main elements. The determination of the basic wage derives from the importance (responsibility) of the managerial assignment and from the degree of complexity of the managerial work, that is, it primarily recognizes the assignment itself, independently of the level at which the holder of the assignment attends to the task. At the same time, the mobile wage is designed expressly to recognize achievement. One of its factors, the annual premium of the managers, depends on the profitability or some other index of the enterprise, while the complex recompense rests on a comprehensive evaluation of the whole enterprise activity. In the case of managers, profit sharing is added to this. The material incentive system of the top enterprise managers is similar to that of other managers, although this is run not by a superior authority but by the top enterprise leadership.

In principle, this incentive structure is suitable for creating appropriate material incentive for the managers if in practice it recognizes actual achievements with pay representing an appropriate incentive power. But its practical functioning raises many problems:

1. Within the narrow limits of the differentiation, the earnings of the managers has little to do with the work performed, with actual achievement, and with their capabilities. The size of the basic wage, which represents the decisive weight of managerial earnings--or 63 to 75 percent--does not depend on the manager's own responsibility, work and importance, but on the economic importance of the enterprise, the economic organization, or more exactly on

its size. Thus the basic wages for individual managerial categories (the highest level managers and the second and third level of economic leadership) can pass into a more favorable or less favorable position depending on whether the enterprise belongs to the "special," A, B, or C category (D category has been eliminated).

In managerial earnings, the ratio of the mobile wage to the basic wage in 1977 was about 32 percent, that of the premium 21.1 percent and of the bonus 11.8 percent. (In principle, the mobile wage, depending on the enterprise category, can come to 40 to 50 percent of the basic wage, and in fact the ceiling of the latter has been eliminated.) This ratio in itself would not appear to be slight if the earnings (including the mobile wage) were the carrier of an adequate incentive power and would actually follow work performed. Problems here are caused by the following:

--the main index of profitability is the success of enterprise management, which, however, as we have said, also reflects with distortion the actual achievements and can be manipulated as a consequence of economic regulation, among other things the subsidy practice of the 1970's, the problems of the price system, and so forth;

--in establishing premiums and bonuses, the whole system of viewpoints beyond profitability is taken into account, although the combined realization of various, frequently contradictory points of view opens a wide field for subjective judgment;

--in respect to managers belonging to the highest authority of the enterprise, to the managing director, or to managers belonging to the director's sphere, frequently such viewpoints come to the fore in the establishing of premiums and bonuses in the absence of achievement criteria like loyalty to the superior organ or to the superior, or the satisfaction of one's own demands;

--in establishing premiums and bonuses, frequently the rule is valid that the decision-making manager seeks to adjust the reward of the subordinate to his own--or to put it more exactly, to a level lower than his own;

--the viewpoints of the political social organizations strengthen this tendency in the establishing of premiums and bonuses.

Therefore, it may happen that while we are speaking of the material incentive of the managers, hardly any relation can be shown between the deployment of managerial earnings and the success of the enterprise, and in fact it frequently happens that despite permanently deteriorating enterprise results managerial earnings continue to increase.

2. Earnings by the managers are low in themselves and in comparison to other groups of workers, and relation to this the earnings are too little differentiated for expression to be adequately given to the work performed by managers and the differences among them (speaking of it in an inventive way even if not linearly following work performed).

In 1979 the top managers (responsible managers of enterprises, cooperatives, and institutions: directors, chairmen and their deputies) earned on a monthly average 7,747 forints projected on the economy as a whole; managers at the second level (technical, trade and economic managers of Class I, that is, department heads, their deputies, independent section heads, and so forth) received 7,204 forints monthly; managers at the third level (economic managers of Class II, that is, section heads, independent group managers, and so forth) received a monthly average of 6,125 forints.

Between the average wage of top managers and managers of the third level there was only a difference of 32 percent, expressed in percentage of the latter, and the average wage of the top managers was scarcely more than twice as much as that of their subordinates; finally, the average wage of managers at the highest level was not even twice as much as that of the skilled workers, and thus the frequently criticized (and in most cases rightly so in our judgment) situation occurred in which skilled workers could legally earn more--and not only the best of them, because wages did not unconditionally follow achievements--than the first class managers of the economic organizations and enterprises to which they belonged. This is morally as well as materially harmful.

3. In managerial incentive we find the problem evident in other relations as well, namely, the pay differences are not of such extent that they would help advance in a perceptible way the satisfaction of the needs of those concerned (along with the given satisfaction of needs, consumption aspirations, commodity relations, and so forth).

Thus, for example, the wage surplus of the managers may ease the costs of housekeeping tensions--a matter which is more important to workers than to managers--but is not enough for the solution of other important problems, that is, the reduction of material cares that frequently weigh on them (for example, their own or their children's housing problems) or perceptible progress in meeting their more important needs (house furnishings, car purchase, travel and so forth). Even the higher pay that goes with a managerial assignment is frequently insufficient for this.

4. Managerial basic wages, which make up 63 to 75 percent of earnings, are determined on the basis of pay-rate schedules for nonmanual workers. For the highest level of managers in economic organizations and other institutions they are determined by the highest authority that supervises the organization, and for the other managers they are determined by the one-person, responsible manager of the organization.

The development of the pay rates is an important factor in the situation as it has developed: by 1980 wage rates of the system introduced in 1976 were rather out of date, and thus the basic wage of managing directors in enterprises belonging to the special enterprise category could still be set at between 8,000 and 10,000 forints, while the basic wage of directors in the D category could be set at between 4,700 and 6,400 forints (!). The wage rates were modified somewhat but not significantly on 1 January 1981. (In the

former category the ceiling was raised to 13,000 forints; the latter category was eliminated and the remaining lowest ceiling was set at 9,000 forints.)

What is socially surprising is that even in these categories with their low ceilings, the starting level of the higher managers was very low: in 1977 it did not even come in most places to one-half of the attainable wage increases. This means that they did not even use the legally available possibilities for better material support of the managers of the economic organizations.

Most significantly evident in our economy in the establishing of managerial earnings is the contradiction between work-related incentives and practice, which for workers at higher levels in the organization and in society awards higher pay or income unconditionally, that is, independently of work performed. In a significant share of cases the latter is justified, as for example responsibility usually increases and requirements are greater as one progresses up the organizational ladder, but it happens quite often that the managers at the lower levels actually carry heavier burdens than those higher on the ladder, that is, the value of the work by certain specialists or organizational units exceeds all others for the enterprise, and in the final analysis for society. According to experiences, however, even in these cases the decision-making mechanisms related to pay and rewards adjust the material allotments generally to the level of the organizational assignment. Why is this?

In respect to the earnings of the top enterprise managers (whether we mean overall decisions determining the listing of categories or pay scales or specific decisions determining the pay of managers), the right of determination belongs to the highest authorities (the functional and sub-branch ministries); in respect to the pay of other managers, however, the topmost manager of the enterprise has the right of decision. The earnings of the managers and their colleagues in the highest authoritative bodies is set relatively low (as compared to those of the enterprise managers) largely out of political considerations and conventions, independently of the fact that the importance, responsibility and requirements of their work in some cases far exceeds that of the managers of areas belonging to their management. Under such conditions, if a manager or the highest authoritative body proceeds from the requirement of distribution according to work, but at the same time the above-mentioned factors obstruct him in the evaluation of the areas and of work actually performed under his management, he will naturally adjust their earnings--whether basic wages or rewards--to his own, or more exactly, below his own. And for similar reasons this is how the top leadership of the enterprise deals with its own subordinate managers. In other words, the principle of distribution according to work is deemphasized in favor of the hierarchical principle, and the earnings express the work performed to the extent that the hierarchically higher position represents at the same time a greater work accomplishment.

The survival of this practice is strengthened also by the political element that influences the economy. In questions about earnings under present conditions, the leaders of the political-social organizations cannot break loose

from the fact that their own earnings--for political considerations--are quite low, independently of work performed, as compared to that of corresponding managers in the bodies of the highest authorities, or of the enterprise managers. In certain action aspects their ideological motives and ideological convictions obviously can help overcome this problem, but with the development of their earnings ratios it will conduct their positions as related to earnings differentiation into a characteristic direction. At the same time, the practice has led to many other troublesome consequences:

--the situation that has developed on the labor market has put many working sub-classes in a favorable position, and these groups--exploiting the demand for their work--have reached and are reaching a far higher wage than was and is intended for them by the managers, confusing the earnings ratios judged proper and intended by the management guidance. Among other things, this is how we can explain the earnings of the skilled workers--and quite often of semiskilled and unskilled workers--compared to which managerial earnings appear anachronistic;

--similarly it has an effect on the real economic processes when the topmost managers of the economic organizations and institutions, who bear primary responsibility for the operation of their organization, are obligated to pay their subordinates with the means of their own organization with the result that quite often, independently of work performed, they move into a more favorable position in respect to the development of earnings (not by way of basic wages, but premiums and bonuses).

6. In the development of managerial earnings levels and ratios there are also indirect political and social values mediated by policy which at the time of their formation were designed not only to demonstrate the fulfillment of certain proclaimed socialist principles but also embodied the requirements and realities imperative in organizations and in society from the aspect of cooperation and political stability.

Since most of the economic and political-social managers are party members, it is right to require of them to perform their work well not simply out of material interest but also out of a sense of calling, ideological loyalty and conviction. But the emphasis on this political point of view, which is very much justified from the political and social aspect, does not need to force into the background the consideration of material interest and the requirement for creating incentives, although it may carry with it such tendencies.

However, the socio-economic conditions for the realization of the principle has been basically altered in the past 15 to 20 years:

--the satisfaction level for the material living conditions and needs of society has risen enormously; formerly even a relatively very slight earnings difference could cause perceptible differences in the satisfaction of needs, but today they have a lesser effect in this way;

--formerly it was exclusively the managers who represented that group of society living in the best material conditions; nowadays, however, many social

groups with various backgrounds have come into a similar or more advantageous position (creative intellectuals, artisans, skilled workers in the second economy, and so forth);

--formerly an egalitarian ideal had a strong effect in public thinking and ideology, which was concentrated almost exclusively on the equality of earnings and incomes, and now this has yielded to a more differentiated approach.

It now appears that economic rationalism desires--and socially and politically it becomes more and more tolerable--that wage differences between managers and their subordinates should be increased, or that the wage scale should be spread in general.

All in all it may be said that the material incentive system for enterprise managers, in its present form and as a whole, is not very suitable to interest managers in more successful management or in the performance of any other kind of task that may be conceived for them, and to stimulate them in this direction. Their earnings and their earnings differences do not carry enough incentive power within themselves, nor do these reflect their work performed, their achievements and their differences (possible or actual). While in recent years the political program (if you wish, the values and principles) have set before economic managers the intensification of the success and profitability of enterprise management as the strongest requirement, economic management has not succeeded in adequately transplanting this into the interest relations determining the specific actions of the economic leaders. The position of the economic leaders is less secure today, but independently of their better personal intentions they continue to have a weak interest in producing enterprise results and profits at an increasingly higher level. In fact, the inappropriateness of an incentive system which prefers the average by removing differences is today all the more in conflict with their interests. The same with the excessive "lag." Instead, the strong interests of the economic managers are necessarily tied to the fulfillment of those criteria which, in part at least, differ from the achievement principle, and on which their position, their personal advance, and their material or moral recognition depend.

It is also an unfavorable consequence that the material problems of the relatively poorly paid economic managers draw them away from their work, and in some cases they must look for material compensation. The managers themselves join the "second" economy, and the fact that their activity of this type is relatively slight (10 percent of them are interested in a second job, in a part-time job, in intellectual paid work, in physical paid work and so forth) is due partly to the burdens of their main position, the limited nature of the demand for their qualifications, and frequently to legal regulations which preclude such activity. Similar symptoms and causes are in evidence also among the leaders of political-social organizations.

Manager Selection and Incentive

Manager selection can be included in the organizational-social mechanisms for determining the interest of managers only to the extent that the possession of

the managerial function itself makes it possible to meet certain needs, that is, the selection of criteria for manager selection becomes itself a motive for managerial actions. Therefore if actually performed work (that is, those factors which mean a guarantee for the success of future work), is given appropriate weight in the criteria for manager selection and managers are designated decisively or removed on this basis, manager selection itself can be a factor in the incentive for good, managerial activity. And vice versa, if this process is conducted independently of work performed, it will also ruin the effect of other means for creating incentives.

Manager selection in our economy is a sensitive area where the differing (quite often contradictory) efforts, the varying economic and political points of view, the interests of the central organs and the enterprises, including the economic, political-social organizations, and groups and individuals come into conflict. All the more so, because in this question the concern of individual interests is also quite strong: under our socialist organizational social relation, selection as a manager is for the individual one of the paths to success, and there are significant social groups for whom this is the main channel to advancement. The obtaining of a managerial assignment or a rise in the managerial hierarchy represents at the same time more permanent work, better work tasks, generally more favorable working conditions, as well as an increase in earnings and income, an improvement in material living conditions and an increase in social respect and prestige--for the social importance of the managerial person is sometimes emphasized by such obvious symbols as his private office, vehicle use, secretary and so forth. All this is true even if there are exceptions and there are social groups for whom the managerial assignment is not attractive, and not every managerial assignment is attractive. And this is independent of the extent to which the material incentive of those already in positions is assured in successful management or other goals.

The outcome of the selection and the related interest processes are determined by the above discussed conditions of manager selection and management.

--The fact that in manager selection we have to weigh a complicated combination of economic and political viewpoints and moreover the fact that in respect to the most important economic viewpoint, the judgment of work performed, there is no reliable yardstick--because there is nothing like it either for the judgment of enterprise activity--leads us to where the economic criteria of suitability are quite often forced into the background, and other viewpoints, chiefly political, are brought to the forefront. Also exerting influence in this direction is the natural approach of the party organs, which share in the manager selection decisions, to evaluate necessarily upward the political criterion, that is, its usual practice is to "reward" with economic functions some of their own functionaries and perhaps council leaders. (It is another matter, that work done in the party apparatus is a very good school, from many points of view, for economic managers.)

--Since the main substantive index of work performed is not only professional training but at the same time political reliability and managerial talent, and as such it operates only in a limited way; the external--we may put surely:

the formal--characteristics of certain criteria are of necessity emphasized during the weighing of the selection. Thus instead of weighing work performed, professional training, and managerial talent, schooling and practical experience is emphasized (which among other things leads to making fetishes of certificates and diplomas); political reliability is identified with membership in political-social organizations and the functions held in them.

Quite often a bureaucratic approach also supports the emphasis on external, formal features by the organizations participating in the selection of managers.

--Individuals and social groups, motivated by their interests, seek to exert strong pressure on the process of selecting a manager, something from which neither the economic nor the political-social organizations can fully free themselves. At the same time, the realization of ideological requirements--in the organizational and social sense--which usually determine the selection of a manager is in good part unregulated and rests on unwritten rules and conventions which have developed among the state organs, the economic organizations and the party organs. All these things together give scope to the informal processes influencing the informal groupings that weave through the economic and political-social organizations and set up their own criteria to the social requirements designed to regulate the selection of managers.

--The sanctioning element is also missing from the selection of managers: in the past it rarely happened that an unsuitable or poorly working manager would be discharged. Beyond the political considerations of strengthening the sense of stability and confidence, a role was obviously played in this reluctance by the described difficulties in measuring achievement. And what is more: there is today a greater inclination to replace the drawing of necessary personal consequences with organizational measures instead of grading work and achievements, and in this light the suitability of a given manager or group of managers, and proceeding from here in carrying out personal measures; rather they will bring about some changes in the organizational unit which they guide or in the organization, which like some "unintended" side-effect will solve the personal problem or question. (In such a case, those affected as well as the decision makers are freed from the negative consequences of the procedure.)

Unfortunately, on the basis of all these matters the operation of manager selection has hardly become the source of an incentive which would put the action of our managers clearly in the service of overcoming present economic difficulties and solving economic tasks.

If we examine the material (and nonmaterial) incentives of enterprise managers, their action conditions and possibilities together with the increased political tasks of our days, the picture is not at all reassuring. We must clearly see that most of the problems in this field are not the characteristic problems of the situation of the managers but stem from one stock with those shortcomings which may be found in the operation of the wage system,

the incentive system, wage regulation, individual and enterprise achievement measurement, and the regulation of the whole economy.

And still, a very important factor in the present problems and in progress is the managerial incentive. What can we set today as a realistic goal for improving this situation? In my judgment, over the short term--that is, in course of changes in the offing--we should concentrate our efforts primarily on the elimination or at least the easing of those negative phenomena and trends which have an unfavorable effect on the approach and action of those more than inconsiderable number of managers who actually regard their work as a calling and even without particular material incentive are willing basically to do it well. (Therefore, we should concentrate on increasing the general--among other things, material--recognition of managers, on the reduction of counter-incentives related in some cases to successful management, moderation of the anomalies in manager selection, and so forth.) Only over the long term in relation with the development of the whole system of economic management and regulation can we set it as a realistic goal--by closely linking managerial earnings (premiums, bonuses, and so forth) and enterprise success--to make managerial incentives the driving motor of the solution to economic tasks and successful management.

Consequently, we must in any event guard against the lure of such simple solutions limited to the problems of managers as an increase in pay and earnings for their own sake. Although the step may appear necessary and it can scarcely be avoided to increase the social (including material) recognition of managers, it can lead to results, in respect to the development of managerial incentives, only if accompanied by stricter requirements on the work of managers and enterprises, or bringing to life criteria of achievement measurement on basis of which society can clearly judge the work of managers and of economic organizations that are managed by them.

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CSO: 2500/273

PROBLEMS OF EXPANDING FOOD INDUSTRY ANALYZED

Budapest MAGYAR TUDOMANY in Hungarian No 4, Apr 82 pp 267-272

[Article by Aladar Sipos: "Some Problems of Our Food Industry's Expansion"]

[Text] The place and role of food production in our national economy is generally well known. We have achieved results in the last decade in improving food supply of the population and also in increasing exports. In my comments,* I wish to direct attention primarily to some factors which hinder progress.

The heretofore limited cross-section of our food production is in the food industry which is working, on the one hand, with obsolete production and technology and at times under inadequate hygienic conditions, and on the other hand, it is made up of unjustifyably large enterprises which results in increased transportation costs and lower product quality.

Even though in the last 10 years the fixed assets of the food-industrial enterprises have been increasing relatively rapidly, its average technological level conceals very large differences between the various branches as well as within those with respect to the various enterprises. That is, the major developments have been aimed mainly at solving or easing the basic tensions. Thus, for example, the rapid increase in grain production made it necessary to build grain-storage facilities; the increase in milk production, to expand the milk-processing facilities; the steady increase in slaughter-poultry production, to build new poultry-processing plants; the increase in slaughter-hog production and the opportunities for increasing the meat industry's exports, to build new slaughter houses and meat-processing plants with high hygienic standards which satisfy export requirements and to expand existing ones; the situation of vegetable oil on the world market and the increase in the production of domestic oil seeds, to build a new oil plant.

The fact that while during the time period of the Fourth Five-Year Plan we spent 33 percent of the food industry's investments on new facilities, but

*Comments delivered at the 22 December 1981 session of the MTA [Hungarian Academy of Sciences] presidium discussing the situation and tasks of the domestic food industry and of the food industry's research projects.

in the Fifth Five-Year Plan the ratio of new facilities amounted to 48 percent of the investments in this branch, proves what I said above. Thus, there was no financial possibility to improve the technological standards of the existing plants and to replace obsolete equipment with more modern equipment. Because of all this, the food industry's fixed-asset inventory is becoming more and more worn out with each year; at the end of 1980, the net value of the fixed assets represented 65 percent of the value of the operating inventory. The ratio of the fixed-asset inventory depreciated to zero but still operating in production is increasing.

The Hungarian food industry's technical level can be considered average in European respects. The level of its productivity is 35 to 40 percent lower than those of the food industries of the recognized most advanced countries. The level of modernness of the equipment--with the exception of some of the newest plants and installations--is far behind the currently known most advanced standards.

The operating costs of our food industry, its specific water and energy consumption are higher than required by advanced techniques and technology. The fact that its electrical-energy consumption is lower in the technological processes than at the modern food-industrial enterprises of the advanced countries, indicates a relatively lower level in its mechanization.

A comprehensive study of the product structure has established that of our food industry's 363 most important product groups 63 can be qualified as "good," 165 as "adequate" and 136 as "inadequate." One factory that qualifies as advanced level can be found in most of the speciality branches, but the others are strongly declining, both in the technical and moral viewpoints.

The result of poorly interpreted frugality with development resources is the often-seen picture when certain intermediate or peripheral sections of a modern line are missing. At times, there is a domestic, or perhaps an imported, machinery unit in the middle of the production sequence, out of sync with the other sections. In many cases, the imported equipment can not deliver the minimal performance and is often operated by an unjustifiably larger number of service personnel.

Food-Industrial-Machinery Production

Production tasks of increasing quantity and quality, and the limited development opportunities are a contradiction appearing to be practically unsolvable for the food industrial enterprises. Beyond the debts accumulated in recent years and the low profitmaking opportunities resulting in poverty [sic], improving technology or at least maintaining its level at the food-industrial enterprises is made more difficult by the weakness of the domestic food-industrial-machinery production base.

The level of our food-industrial-machinery manufacture--with the exception of a few equipment types--is mediocre, and its capacity does not even cover the

industry's needs for simple replacements. Our food-industrial-machinery manufacture--as our machinery manufacture in general--is conducting an export-oriented production and sales policy, but its offerings and the level of its products are, for the most part, suitable for the needs of the developing countries. But for a long time, food-industrial-machinery manufacturing specialization within the CEMA has been the topic of negotiations, and to date this has produced little practical results. Therefore improving the technology of our food-industrial enterprises can be implemented only through greater or lesser machinery imports, for the most part from capitalist countries. We are in a similarly unfavorable situation also in the area of machinery and equipment of a nontechnological character (pumps, motors, connecting elements, etc). Spare parts manufacture cannot keep up with demand either in quantity or in quality.

In addition to the lack or insufficiency of domestic packaging-machinery production, packaging improvements are also hindered by the lack of domestic production of modern packaging materials and packaging equipment. This circumstance greatly lowers the competitiveness of our products on foreign markets and increases the need for imports. Because of the quality shortcomings of the domestic packaging materials and packaging equipment, the performance of the high-performance and sensitive foreign packaging machines falls significantly short of the nominal.

Rational equipment management in the food industry requires, on the one hand, modernization which includes not just the modernization of individual pieces of equipment but rather the reconstruction of entire plants and includes a planned program of a series of these, and also includes the construction of a nationwide network of processing facilities (large, medium and small ones), which--in addition to significantly reducing transportation--will also make it possible to fully process food raw materials. All these would significantly increase food production--even with the same raw material base. Consequently, domestic supply would improve and exports would also increase.

One of the basic requirements of our domestic food supply is that everywhere there always should be as much of a supply of the most important foods (for example, bread, flour, lard, sugar, etc) as is needed. But much more than this is required nowadays to maintain society's general mood at the proper level, and in part the food industrial enterprises have to produce it. Apart from a few exceptions, the food-industrial enterprises have to produce it. Apart from a few exceptions, the food-industrial enterprises are satisfying the demand in all product groups and with adequate selection. But in spite of this, there are often justifiable complaints by consumers in connection with merchandise supply. Most of the problems originate not on the production side but in the area of product distribution.

Commercial Problems

The merchandise volume handled by the domestic food trade increased much faster in recent decades than the capacity of the commercial network. The switch to the modern self-service system and building large food supermarkets only partially eased the problem. In the 1960's, the food industry

also actively helped modernize the food stores by, for example, purchasing display coolers, but it can not solve the question of expanding the network of stores, mainly of the selling floors and store warehouses.

To a large extent, the lack of coordination between the food-industrial enterprises and the food sales enterprises results from the fact that the retail enterprises have a direct financial interest in keeping on hand as small supplies as possible, which means that the amount of orders placed by the store decreases, but the frequency of deliveries increases. At the same time, this also means that the industry's merchandise delivery and shipping container and material collecting jobs increase and merchandise transportation costs go up. Cooperation between the food industry and food sales, the goal of which is to increase sales on the basis of common financial interests, is relatively rare--if it exists at all.

The relationships between food-industrial enterprises and foreign-trade enterprises have undergone qualitative changes after 1968. In several cases the factories developed direct connections with the foreign customers, and the foreign-trade enterprises also helped modernize production. But in my opinion, further efforts must be made also in this area. The possible tension with the foreign-trade enterprises results in many cases from the inadequate quality of the products and from the nonhomogeneous character of the products of various factories. The quality problems could be helped by increasing production discipline; it is more difficult to insure the homogeneity of the export product base, since one foreign-trade enterprise may be selling the products of 8 or 10 domestic industrial enterprises.

The foreign-trade enterprises have a greater opportunity to assume a role in the production and product development of the industrial enterprises, since the basis of relationships with the industrial enterprises is the interest which can be more flexibly adjusted. On the other hand, the sales markup of the domestic trade enterprises, treated as a fixed price, does not even furnish sufficient funds for the necessary development of the network.

Opportunities Concealed in Enterprise Independence

Significant efforts also have to be made to increase organization in the food industrial enterprises. It would be difficult to list fully and in an organized manner the criteria of a modern enterprise, but such requirements as knowledge of the environment and of its own situation, recognition of the changing situation and the ability to flexibly adjust to it, innovative ability and the courage to accept risks, the ability to influence the environment, etc. would certainly be among them. But these characteristics can develop only in an independent enterprise. In the present situation of our national economy, only the enterprises can solve a significant portion of the national economy's problems. Let us attempt to outline the system of conditions of this ability of the enterprises in the food industry, noting at the outset that the reality of some of our assumptions must be checked by research and analysis of the national economy and of the economics of the enterprises. We may also make some assumptions which at the present time may

appear to be illusory or naive, in the reflection of certain dogmatically defended concepts (for example, the obligation to buy up agriculture's products).

a) I will mention first that it would be necessary to create a system of conditions of independence for the food-industrial enterprises. This is a multifaceted task which includes:

--a new directing system for directing the state-operated food-industrial enterprises, freed from the restrictions of the specialty branches;
--determination of the minimal lower limits of the obligation of the food-industrial and food-sales enterprises to provide the public with supplies;
--creating a self-financing ability for the food-industrial enterprises, considering also the ability to repay the loans for developments decided upon earlier and now completed.

b) It must be made possible for the food-industrial enterprises to be able to form multifaceted relationships of varying content not only with the agricultural enterprises but also with the domestic food-sales enterprises. It must be noted in connection with these things that our retail food enterprises are also characterized unjustified centralization.

c) In the interest of improving the level of our competitiveness on international markets and of our domestic supply, emphasis must be placed on the question of quality in all areas of food production and sales. Thus, among other things,

--quality must be at the center of the merchandise relationships between agricultural and food-industrial enterprises, and of cooperation based on common financial interests;
--the obligation of the food-industrial enterprises to buy up agriculture's products should be limited only to agricultural products that can be processed profitably and are suitable to produce quality merchandise;
--objective qualification based on measurement by instruments of the food industry's raw materials of agricultural origin must be made general wherever this can be solved;
--in organizing the process of production in the food industry, a broad-based system of quality control and hygiene must be implemented everywhere, which begins with the receiving of materials and ends on the retail sales floor;
--quality control by the authorities must be made more strict and more frequent in every phase of production and sales, and must be coupled with financially felt consequences;
--paying workers' wages based on quality must be made general, or at least much broader than it is now, in the large agricultural operations as well as in the food-industrial enterprises.

d) The internal organizational structure of the food-industrial enterprises needs to be reviewed and modernized. It would be practical to replace the linear organizational system of production management with a product- or product-group-centered production-management system and one which maintains

external contact centered on the end product. This could result in broader development of the knowledge of the experts working in the production area as well as in the staff organs of the enterprises.

The internal decisionmaking authority of the food-industrial enterprises should be decentralized to a greater extent. An increasing ratio of the lower level managers participating in the direct management of production are young professionals with top-level qualifications who have more energy and courage, and more ability to take the initiative than do the workers close to retirement age, who, on the other hand, have several decades of professional experience that could be put to good use.

In addition to the modernization of the organizational structure of the food-industrial enterprises characterized by decentralization, the method of enterprise management based on exceptions should also be made general. The essence of this is that the responsibilities and authorities of the enterprise's departments are precisely specified in the rules of organization and operation, and also that each individual department receives the planned tasks to be implemented in each time period on the basis of the enterprise's plan being broken down by department. The middle- and top-level managers are notified about the enterprise's processes regulated and defined in their extent in this manner only when a significant deviation from the plan appears, which requires managerial decisionmaking or a stand to be taken. Thus the manager has to intervene in the enterprise's processes only "exceptionally," in cases of deviation from the regular conditions. In this way, the major portion of the managers' working time remains available for real managerial activity and is not divided up by the mass of operative decisions. The basic precondition for managing based on exceptions is to adequately break down the enterprise's plan and the financial interests related to it. This method would also make it necessary to modernize the enterprise's internal information system and the operative accounting.

e) The question of organizing the enterprise's operation and work came into the focus of interest as a result of the December 1971 party resolution. The party resolution was justified in focusing on this question and called the attention of the enterprises to its importance. In connection with this, the problem started when at the beginning of the following year the party resolution became national policy through a government resolution. The government resolution was dominated by bureaucratic and administrative elements such as, for example, the question of measuring the level of organization which even to this day has not been solved (and which, by the way, cannot be solved in that form), the preparation of organization plans and reports, taking these into consideration in evaluating the work of the managers, etc. This bureaucratization was only topped off by the requirement of preparing regular statistical reports on plant and work organization. It must be clearly seen that plant and work organization is an enterprise function which belongs within the enterprise's sphere of interest. That is, the enterprise itself initiates plant and work organization and its economic results manifest themselves in the profitability of the enterprise. The plant and work organization of a profitable and efficient enterprise. The

plant and work organization of a profitable and efficient enterprise is promoted not by directives from the ministry but by economic necessity or by the enterprise's interests, or by both at the same time.

Plant and work organization will become lively practice and an indispensable operational element in our enterprises if its results could be kept by the enterprises for the enterprises unimpaired, or we might even say with reduced taxes or tax-free. That is, the trust that regroups the enterprise's income does not honor separately the additional profit of its enterprises deriving from plant organization.

f) Compared with other branches of industry, the food industry has a significantly bigger job and at the same time more opportunity to improve plant and work organization. That is, the food industry not only converts the raw materials received from agriculture into finished products, but also exports some of them (for example, slaughter animals) immediately after receipt, and others (for example, grain) after short or longer storage. Wholesale purchasing is an organic and quite costly activity of most of the food industry's specialty branches. That is, significant losses do occur during the time of storage in the stage before processing, losses which derive in part from the biological character of the raw material (for example, in the case of sugar beets), and in part are the consequences of the insufficient capacity of the storage facilities, or of their inadequacy (for example, in the grain industry).

Transportation represents a large cost factor in the "operational" branches of the food-industry enterprises, and because of this organizing transportation has a great significance. This is directed primarily at shortening trips and cutting down time losses.

There are so many sources of loss, or hidden reserves, in the areas of the processes of wholesale purchasing, storage and wholesale trade that continuously and partially uncovering and eliminating them is a sure source of constantly increasing the enterprise's results--noting again here that this is the case to the extent to which the enterprise is directly interested in these financially.

g) The tasks of organizing the manufacturing processes are also manyfaceted in the food industry. Increasing the intensive utilization of machinery and equipment by means of decreasing downtime, optimizing the product structure through the use of modern computer technology, decreasing material and energy consumption, analysis and organization of the work place, working hours and work methods in the areas of work organization and ergonomics, the discovery of microlosses by using the tools of film technology and instrumented measurement of work, especially in the interest of better utilization of high-performance bottling and packaging machines, have particularly great significance. There are also many areas and opportunities for plant and work organization in our food industrial enterprises through the discovery of which the enterprise can increase the economy, efficiency and profitability of its operation. I am convinced that through efficient plant and work organization (even without trying to calculate that the sales prices abroad will turn more favorable) the self-financing ability of the food-industrial enterprises can be assured, emphasizing again the precondition for this: enterprise independence!

STRONG INTEREST IN SMALL BUSINESSES NOTED

Budapest MAGYAR HIRLAP in Hungarian 21 Apr 82 p 7

[Article by Ilona Kocsi: "Without Illusions: Small Enterprises of the Office Technology Enterprise--Source of Great Tension"]

[Text] There was great surprise...and even greater interest. The former came to one of the speakers, namely, the deputy economic director of the Information Technology Enterprise, who cited examples from their enterprise, supported by figures. The latter indicated the general interest of the theme: one of the branches of the Chamber of Commerce not long ago put the undertaking of large businesses on the agenda. The questions poured in, and as the news that has come to light since then bears out, not without reason. A representative of the Danube Iron Works, for example, inquired about the effectiveness of the ground-work, a colleague of the Csepel Auto Factory asked about leasing fees and a possible admission fee. Since then small businesses have already been formed in both places--in the form of enterprise business work partnerships. It appears that the enterprise making the presentation has been left behind....

But in the event this is immaterial. Let us return to the figures that caused such surprise earlier. Dr Gyula Fonyodi, deputy economic director, had said: "In the first half-year, approximately one-half of the 1,500 productive workers at our enterprise indicated their participation in various small businesses. By the end of the year their ratio may reach 80-90 percent." I believe that it is not necessary to explain the cause of the surprise in any greater detail. Two months have passed since then; let us take an even closer look at the facts.

A Flash in the Pan

"In any event I must modify the figures," the deputy economic director mentioned at once at the beginning of our conversation, "for the blaze at that time has in many cases proved to be a flash in the pan. As information has expanded, it has become clear that it is not so easy to undertake something new. The hoped-for additional income is attainable only with intense effort. Several people withdrew their applications, or we ourselves saw the ideas as unrealistic. Now we figure on a maximum 500-800 people, that is, by the end of the year one-half of the productive workers at most will take part in an

"enterprise business. If we also take extra-enterprise forms into consideration, then it is conceivable that there will be more than this."

The exact figures therefore are not known. That is, you are still at the discussion stage, and not that of implementation?

Yet things are not quite like that. For example, it has already been decided that in 14-15 places there will be business operation by contract, and more than 25 enterprise business work partnerships are being formed. Many have received the preliminary authorizations, and for all practical purposes are now just waiting for a response to advice and for filing. The conditions for material work have been provided.

Why did they choose precisely these two forms of business enterprise? The regulations make others possible, as well....

The business operation by contract is the most flexible form, although it is a great limitation on its formation that it can work with only 15 people. In most cases, it is hardly possible to isolate a 15-person unit in our enterprise. We sign a contract for 5 years, so that the contractors might have plenty of time, and not want to "get rich" in a year. We have determined precisely how much of a fixed rate and how much of a profit proportional to returns must be paid in to the enterprise, but if for any reason this were not to succeed, the enterprise guarantees payment even to those working here. The enterprise business work partnership is beneficial, therefore, because here the enterprise may, if need be, intervene in the work, and if it sees fit, it may even halt it. Risk of course exists here, too: if loss occurs, the members are responsible only up to the amount of their contribution, or up to the income obtained in the association. The rest must be paid off by the firm.

They May Not Mix

It appears from this that in both cases the enterprise assumes a risk. Probably the benefit to be obtained by the business is not insignificant, otherwise it would be incomprehensible why they started it.

If the estimates prove correct, then our profit will be 5-8 million forints more this way, than if everything had remained the way it was. This was one of our reasons. The other is that in this way we may alter our spheres of activity and raise our capacity without any extra additional investment. Smaller units can often transform our heretofore occasional losing work into a profitable undertaking, or if we must tackle the maintenance of the latest office machines, we no longer need to train an additional work force. Since the selection of office machines is constantly expanding, the old ones are being replaced by ever more up-to-date ones, and so we are training 600-800 workers per year anyway. And this is no small investment. We keep pace with the tempo, and afford the costs, only with great difficulty. Now, however, it is becoming possible not that we increase the training, but that existing workers also undertake the maintenance of the latest office machines. If it does not work out in any other way, then it will in a small business or in a

contract format. And as long as we are speaking of reasons, I must certainly mention one more: our wage level is extraordinarily low--43,000 forints per year, but the bulk of the workers are technicians who have completed secondary school. The new forms of business also offer greater scope for income differentiation, as well.

This is true, only I do not know how one can separate activity during working hours and that carried out afterwards: after all, office machines have to be repaired in both cases. The suspicion will immediately arise in people: supposing skillful people turn up who increase surplus labor at the expense of "regular" work time, and thus labor discipline, which is not very high anyway, deteriorates further....

This can occur only if we do not work out exactly what must be done during working hours, and what afterwards. For example, we determine the type of machines that must be serviced during working hours, we limit the range of clients, and the work partnerships can work only outside of this. The two may not mix, and they must be so well arranged that we may continuously monitor them. This is not a concern with business operation by contract, for there the primary job and spare-time work coincide. If we detect any fraud with the work partnerships, we will immediately disband the group.

Variable Work-Plan

The Information Technology Enterprise is typically a service firm, and it must do the bulk of repairs during working hours. How then will the work partnerships operate? Most of the offices work an eight-hour work-plan; there is no second shift. That is, if they are going to repair the machines only after working hours, then they will not be successful.

Some repairs can indeed be carried out only on the spot, but there is also a possibility for doing the work in a shop, that is, for assembly after working hours. Examining this carefully, we have decided to designate divided working hours for some work partnerships, while for others there will be no set work-plan. The divided working hours, for example, may last from 6 to 10 in the morning, then there will be a break for several hours. During this time the work partnerships will collect the work, or will do the repairs right on the spot. Between 2 and 6 o'clock in the afternoon, on the other hand, they will again do their primary job. So that we do not support the contractors just in principle, such practical possibilities for work must be created. The regulation of working hours with no set limits is simpler: we will determine norms that the workers must fulfill. For example, we will designate those machines that must be serviced regularly. Beyond this they may repair what they want. If on the other hand we receive complaints, we will immediately go back to the old system.

Divided working hours, no set working hours, during which a large number of workers will continue to work set hours?! Whatever happens, this will lead to tension and friction....

We have no illusions. If everyone were to work according to these rules, then there would be no problem. Now, however, right in the middle of the old, and to a certain extent rigid, system of regulators the possibility has presented itself for experimentation, for more effective work. This in itself is already a great source of tension: it obviously creates a conflict between the old elements and the new. How the enterprise will succeed in settling this, and whether it will succeed at all, these are still questions for the future. We have to undertake the new forms of business, however, even under conditions like these.

8971
CSO: 2500

HOUSING CONSTRUCTION PLAN IN 1976-1980 OUTLINED

Warsaw INWESTYCJE I BUDOWNICTWO in Polish No 9, Sep 81 pp 31-34

[Article by Tadeusz Zarski: "Apartment Construction in the Five-Year Period 1976-1980"]

[Text] The years 1976-1980 as compared to 1971-75 were characterized, by more favorable ratios between investment outlays for housing and the whole of investment outlays in the national economy, and the gross distributed national income. Taking current prices as the basis of calculations, the extent of the investment outlays for apartment construction, as well as their relation to the mentioned macroeconomic categories, appears as follows:

<u>Year</u>	<u>in billions of zlotys (current prices)</u>	<u>in % of total investment outlays</u>	<u>in % of gross distributed income</u>
1971	33	15.5	4.5
1975	70	12.9	4.4
1976	86	13.9	4.7
1977	103	15.7	5.2
1978	116	17.1	5.4
1979	120	19.0	5.4
1980	124	21.0	*

It should be remembered that both the total investment outlays in the national economy, and the distributed national income showed a decline in 1979 and 1980 in comparison to the previous year. Outlays for apartment investments in the years 1976-1980 were in a more favorable situation relative to other investments, treated as a whole. However, in the years 1971-1975, the increase in outlays for apartment construction was slower than that of other expenditures.

The favorable relation of outlays on apartment construction to the total investment outlays as well as to the whole of national income were not accompanied, especially in recent years, by good substantive results in apartment construction. This is illustrated by the data contained in Tables 1 and 2.

Before analyzing these data, it must be said that they differ relative to the years 1975-1979 from those previously published. The new data are the result of verification work done by the Main Central Statistical Office (GUS). The need for such work came from the widely known fact that the production data of a given year include apartments assigned for use in the first months of the next year. This work is not completely finished and the new figures may still be amended. According to information obtained from GUS, possible changes will be minimal. The verified data for the years 1976-1979 are 37,000, and, for 1975, 16,000 apartments fewer than previously published.

In light of the data contained in Tables 1 and 2, there was an increase in the extent of construction up to 1978. In 1979, however, there was a gradual, small decline in the extent of construction which became very marked in 1980. This decline affected both socialized construction (19.5%) and private construction (22.2%). Consequently, the results in the last year of the past five-year period turned out lower than in 1975, that is, in the last year of the previous five-year plan, despite the fact that the data presented in the table for that year were, as mentioned, greatly reduced in relation to the data previously publicized.

Table 1. Extent of Apartment Construction and Its Investment Structure

Years	Construction				Investment structure		
	Total in thousands of apartments	State	Cooperative	Private	State in % (100 - total)	Cooperative	Private
1971-1975	1121.3	324.8	519.7	276.8	29.0	46.3	24.7
1976-1980	1307.3	253.6	714.2	339.4	19.4	54.6	26.0
1975	248.3	83.1	107.2	58.0	33.5	43.2	23.3
1976	263.6	58.6	141.5	63.5	22.2	53.7	24.1
1977	265.9	48.4	143.9	73.6	18.2	54.1	27.7
1978	284.4	52.1	158.0	74.3	18.3	55.6	26.1
1979	274.4	55.5	146.9	72.0	20.2	53.5	26.3
1980	218.9	39.0	123.9	56.0	17.8	56.6	25.6

Table 2. Fulfillment of the Criteria of the Five-Year Plan for 1976-1980

<u>Type of construction/years</u>	<u>Plan criteria</u>	<u>Percentage fulfilled</u>	<u>Plan criteria</u>	<u>Fulfillment</u>	<u>Percentage fulfilled</u>
	<u>Thousands of apartments</u>	<u>100 = plan</u>	<u>Thousands of square meters of useable area</u>	<u>100 = plan</u>	
Total 1976-1980	1575	83.0	96,250	80,989	84.1
1. Socialized construction	1193	81.1	59,450	49,003	82.4
2. Private construction	382	88.8	36,800	31,986	86.9
1976	275.2	95.8	15,883	15,422	97.1
1977	289.0	92.0	17,350	16,322	94.1
1978	312.7	90.9	19,114	17,677	92.3
1979	339.6	80.8	21,124	17,537	83.0
1980	358.5	61.1	22,749	14,031	61.7

The decline in the extent of apartment construction, with the simultaneous increase in outlays on apartment investments (in current prices) testifies both to a worsening of the economic return on these investments and to the increase in the costs of this construction. In light of these data, it should be stated that the growth in apartment investments and the improvement in the relation of these outlays to the whole of the economic life in Poland, are not a result of a growth in apartment construction but simply of a bad economy, which in turn is a result of errors committed both in the coordination of investments and in construction politics. These same conditions caused a set-back and recession in construction, above all socialized construction. This matter has many times been the subject of various analyses and pronouncements so there is no need to discuss it in more detail. It should just be repeated that the conditions which are having the most unfavorable consequences are:

--the lack of coordination between municipal and apartment investments, causing both a shortage of developed land and of municipal power supply and conversion equipment (water intakes, sewage treatment plants, etc.);

--the uneven development of our well known output potential and, above all, the appearance of gaps in the production of insulation, plumbing, and finishing materials;

--the application of an ever increasing degree of ineffectual technologies and systems of erecting buildings, mainly of the very expensive large-panel technique coming from "house factories," with the simultaneous abandonment of other proven cheaper technologies, and the lack of new, more efficient, less capital-, energy-, material-, and transport-intensive technologies.

The main obstacles to the development of private, one-family home construction have been, and still are, shortages of materials, lack of building ground, and too little credit (until March, 1981).

The result of the unfavorable growth trends in apartment construction was the non-fulfillment of the criteria of the five-year plan for 1976-1980 (Table 2). Noticeable are the poorer results of socialized construction than of private construction. The degree of fulfillment of the criteria lessened with time, which likens the 1976-1980 period to previous five-year plans, with the exception of 1971-1975, when this phenomenon was not observed.

Altogether, in the years 1976-1980, about 2.4 million apartments were built. The long-range apartment program announced by the Sejm of the Polish People's Republic in 1972 anticipated the creation, in this period, of 2.6-2.7 million apartments. Therefore, in relation to the long-range plan for the whole decade, there was a deficit of 0.2-0.3 million apartments, that is, 7-11%.

In the years 1976-1980, the regulations for new standards of designing, confirmed in the previous five-year period, were applied more and more as time went on. As a result of this, there was an increase in the average size of apartments in cities, by 6 m², and in the country by more than 8 m² (Table 3). Data from studies made at the Institute for the Development of the Environment indicate that the average growth was realized as a result of designing and constructing larger apartments of particular categories (M 1-6), and not of changes tending toward an increase in the share of apartments of higher categories. On the contrary, a steady increase in the share of small apartments was observed. And so, in 1971, apartments up to M 3 inclusive constituted about 42%, in 1975, 43.5%, while in 1979, almost 49%. This direction of change is completely at odds with the needs resulting from the size of households and from the average size of all existing apartments in Poland.

The last five years saw an increase in the average size of apartments in private construction, though it was slightly smaller than in socialized construction, though it was slightly smaller than in socialized construction with the increase in cities being about 5m² and in the country not quite 5m². Of course, apartments erected in private construction are characterized by a much larger area than those in socialist construction.

Table 3. Average Area of Apartments (in square meters)

<u>Construction</u>	<u>1976-1980</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Total	62.0	57.3	58.5	61.4	62.2	63.9	64.1
Socialized							
in cities	50.4	46.8	47.7	49.0	50.5	52.2	52.8
in the country	54.2	49.2	49.9	53.0	55.4	57.0	57.5
Private							
in cities	99.0	95.5	96.9	97.7	99.2	100.5	100.6
in the country	91.4	88.9	89.6	90.2	91.3	92.8	93.7

The universally-applied index for comparison of the extent of apartment construction in time and between countries is the average number of apartments assigned for use per 1,000 persons. The average figures for selected years for the entire country are given below:

1971	5.8
1975	7.3
1978	8.1 (maximum)
1979	7.8
1980	6.2
1971-1975	6.7
1976-1980	7.5

Therefore, the intensity of apartment construction relative to the population was, in 1980, only slightly greater than in the first year of the past decade.

To show the extent of apartment construction in Poland in comparison to other countries, information is presented in Table 4 for sixteen countries located in our climatic zone (buildings on southern continents can be less expensive and differently equipped) concerning intensity of apartment construction in 1979 (for 1980, data are lacking for countries other than Poland). This intensity is expressed by the number of apartments assigned for use per 1,000 persons and by the number of useable square meters of these apartments per 1,000 persons. In 1978, the position of Poland among these sixteen countries was relatively good as concerns number of apartments per 1,000 persons but much worse in overall floor space of new apartments per 1,000 persons. This is a result, of course, of the much smaller average area of apartments in our country in comparison to the remarkable size in other countries in Europe.

Undoubtedly, in 1980, Poland's position fell in comparison to 1979. In intensity of construction in 1980, we placed in comparison to that of other countries in 1979, in fourteenth position in number of apartments per 1,000 persons and in fifteenth position, ahead only of the USSR, in useable area of apartments per 1,000 persons (Table 4).

A knowledge of the degree to which apartment construction is meeting needs can be obtained by a comparison of the growing net number of households with the growing net number of apartments. This information is supplied, however, only by general censuses. The last two censuses were conducted in 1970 and 1978. A comparison of their results shows that in the eight years between 1971 and 1978, the increase of apartments was 377,000 fewer than the increase in households. As a result, the so-called statistical deficit of apartments grew to more than 1.6 million in 1978.

Table 4. Intensity of apartment construction in selected European countries in 1979

<u>Country</u>	<u>Useable area of apartments</u>		<u>Number of Apartments</u>	
	<u>Assigned for use per 1,000 persons</u>			
	<u>m²</u>	<u>country ranking</u>	<u>units</u>	<u>country ranking</u>
Belgium	1730*	1*	6.9*	12*
Norway	879*	2*	9.4*	2*
Finland	855	3	10.5	1
Ireland	766	4	7.5	8.9
Sweden	764	5	6.7	13
Denmark	753	6	6.1	15
Austria	632	7	7.1	11
Czechoslovakia	617	8	8.4	3
West Germany	615*	9*	6.0*	16*
Hungary	542	10	8.2	4
Poland	498	11	7.8	5
Romania	448	12	7.6	6.7
Bulgaria	444	13, 14	7.5	8.9

East Germany	444*	13,14*	7.2*	10*
Yugoslavia	422	15	6.3	14
USSR	391	16	7.6	6.7
Poland in 1980	394	-	6.2	-

Source: Annual Bulletin of housing and building statistics for Europe 1979.
 United Nations New York 1980; data for Poland--our own calculations

*1973 because of a lack of data for 1979

In evaluating apartment construction in periods other than between successive general censuses, we are using comparisons of the number of marriages contracted with the number of apartments assigned for use. This information is contained in Table 5.

Table 5. Marriages contracted (number of apartments assigned for use)

<u>Years</u>	<u>Number of marriages contracted</u>	<u>Number of apartments assigned for use</u>	<u>Difference between number of marriages contracted and number of apartments assigned for use</u>	<u>Average number of apartments assigned for use per 1,000 marriages</u>
<u>in thousands</u>				
1971-1975	1564	1121	443	717
1976-1980	1606	1307	299	814
1975	331	248	83	751
1975	327	264	63	807
1977	326	266	60	815
1978	327	284	43	869
1979	319	274	45	860
1980	307	219	88	712
in percentages 100 = 1975				
1980	92.7	88.2	107.3	94.8

In comparison with the period 1971-1975, in the years 1976-1980, only 38,000 more marriages were contracted, since, beginning in 1975, for several years there was a stagnation in the number of marriages, though in the last two years there was a clear decline. The increase in the number of apartments assigned for use was, in the years 1976-1980, in comparison with the previous five-year period, greater than the increase in the number of new marriages. As a result, in the entire period 1976-1980, the difference--to the disadvantage of new apartments--between the number of apartments and the number of new marriages decreased in comparison to the years 1971-1975. In observing the relationship between these numbers in individual years, it should be seen that there was a slight worsening of this relationship in 1979 and a very great worsening in 1980. As a result, despite the drop in the number of new marriages, the difference between their number and the number of new apartments was in 1980 larger than in 1975, the last year of the previous five-year period.

Of course, the number of marriages is not the only factor in the increase in apartment needs. These needs also are a result of the desire on the part of single people to have their own apartments and of the desire on the part of families and households of single people to improve their existing apartment situation. The main place where these needs appear, especially as concerns the rural population and rural people supporting themselves on non-agricultural jobs, is the apartment cooperative. Apartment cooperatives have precise knowledge of the members and candidates awaiting apartments. This information is contained in Table 6.

In light of this information, the increase of legally adult cooperative members, amounting in the years 1976-1980 to about 350,000, was less than the growth in the years 1971-1975. This should not, however, be attributed to the growth in the extent of cooperative construction but to a slowing in the rate of increase of new members of cooperatives. This is undoubtedly related to the fact that the constant extension of the waiting period for apartments discourages people from signing up in cooperatives. On the other hand, the decline in recent years in the number of persons reaching full legal age in the overall population of Poland may have a certain influence.

The observed decrease, beginning in 1976, in the number of members waiting for an apartment is a result of the cooperatives' resolutions restricting acceptance to those candidates who fulfill all the requirements necessary for membership. From this also, there was a great increase in the number of legally adult candidates among them, above all, of those who had amassed the required financial means.

The constant increase in the number of people waiting for cooperative apartments, determined of course by the extension of the waiting period, is connected not only to too few apartments built relative to the needs, but also to the policy of the distribution of the apartments. This policy has favored allocations of cooperative apartments through places of work and through offices of city directors. These institutions in the remarkable majority of cases allocated apartments to persons who did not belong to the cooperatives.

Table 6. Legally Adult Cooperative Members Waiting for Apartments

Years	Total	Members	Candidates	Of the total number, coop- erative members with the full investment			Candidates saving for the invest- ment
				<u>total candidates</u>			
1970	876.1	486.1	390.0	*	*	*	*
1975	1529.7	929.5	600.2	*	*	*	*
1976	1651.4	854.3	797.1	*	*	*	*
1977	1720.7	797.6	923.1	1309.7	512.1	411.0	
1978	1776.9	726.9	1050.9	1325.0	598.1	451.9	
1979	1755.8	661.8	1094.0	1506.0	844.2	249.8	
1980	1877.2	613.7	1263.5	1628.3	1014.6	248.9	
Increase 1971-1975	653.6	443.4	210.2	*	*	*	*
Increase 1976-1980	347.5	-315.8	663.3	*	*	*	*

The members waiting for apartments, required by the regulations to make their financial investment, were constantly discriminated against in the distribution of apartments. Such was the policy applied throughout the 1970's, and especially in the latter half, including 1980. This is shown by the fact that in 1975, 53.6% of the cooperative apartments distributed were assigned to individuals on the general waiting list. In 1979, this small percentage fell to 38% and in 1980 amounted to only 37%.

In summarizing the information presented, it should be stated that despite all hopes, the past decade, especially its latter half, was not beneficial to the development of apartment construction and the apartment situation. Despite devoting tremendous investment resources, as a result of obvious errors, a properly functioning construction potential appropriate to the needs was not created. Neither the planned number nor the quality of apartments was reached. In this respect, and also concerning the socially unjust policy of apartment distribution, the degree of meeting the needs, measured by objective indices and from the point of view of the very parties interested in improving the cities' situation in this regard--was much worse.

INFORMATION ON NEW THREE-YEAR ECONOMIC PLAN PUBLISHED

Warsaw TRYBUNA LUDU in Polish 7 May 82 pp 1, 4

[Article: "Stages of Overcoming the Crisis"]

[Text] When are we coming out of the crisis? The answer to this question, bothering many of us, was outlined at the Eighth Plenum of the Central Committee of the Party. Let's remind ourselves that Comrade Wojciech Jaruzelski outlined three timetables for overcoming the crisis phenomena up to 1990, in his farewell speech.

At yesterday's 6 May 1982 press conference at the government's spokesman's office, vice-premier president of the Planning Commission Zbigniew Madej, presented the goals and program of government activities in this timeframe, to the journalists.

In near perspective, until the end of 1982, the government hypothesizes to stop the continuing economic regression, which is manifesting itself through lowering of global industrial production. Is it realistic? Answering, vice-premier Madej pointed out the increase in coal production, as well as copper and sulphur, which are the initial raw materials for other production sub-sectors.

A certain boom was noted in those processing industry branches which depend on domestic raw materials: such as the potato, sugar, fruit and vegetable processing industries and others. Still, production in the chemical, electronic and steel industries is falling. These branches depend to a large extent on foreign sources and have severely felt the over 40 percent decrease in imports from capitalist countries.

The government sees the overcoming of these difficulties by intensifying co-operation with socialist countries. Efforts have been made for deliveries planned for this year to strengthen Polish economy already in first two quarters.

Deliveries of wool, cotton and synthetic fibers from the Soviet Union will keep the light industries busy until the end of the year. Partly, these materials will satisfy the needs of our eastern neighbor but partly they will enrich the domestic market.

Fraternal countries are also giving us resources to buy irreplaceable equipment for ships and automobiles on Western markets which are earmarked for export to socialist countries. Talks are continuing on continuing joint construction of some started but not finished industrial projects. This wide range of assistance requires us to substantially increase our exports to fraternal countries.

Thinking of Stabilization

Vice-premier Madej said that the Planning Commission is working on drawing up the Three Year Plan for Reconstruction for 1983-1985. This plan will also contain a prognosis up to 1990, and will be presented to the government for approval after first two quarters.

In this time frame, the basic reconstruction of the Polish economy will be accomplished. The basic assumptions of the plan are:

--Self-sufficiency in agricultural production is absolutely necessary. It means a necessity to eliminate grain and feed imports (so far, we have imported about 6 million tons yearly). Mr Madej emphasized that it might result in a further reduction in the standard of living. In order to raise agricultural production which would pacify the domestic situation, farmers need substantial supplies of agricultural means of production, fertilizers, pesticides, tractors, agricultural machinery and building materials. These needs give direction for development of industrial production.

Priority has been given for the production of consumer goods and production of industrial goods, particularly for children and youth.

But most clearest priority has been given to export production. It has been estimated that export will grow at the rate of 18-20 percent yearly. It is particularly necessary to increase trade exchanges with the socialist countries. In 1981, 45 percent of our exports went to socialist countries, in 1985, they should increase to 47-48 percent. That is supposed to be accompanied by an increase of imports from socialist countries from 51 percent in 1981 to 53-54 percent in 1985.

An Outline of Reconstruction

On the basis of the above assumptions, one can see an outline of reconstruction of the Polish economy, planned up to 1985 and in a further perspective to 1990.

The press conference makes it clear that the rank and meaning of consumer goods will increase significantly. At present, its share in total industrial production is 29 percent. In 1985, it will increase to 31-31.5 percent, and in 1990 to 34-36 percent.

That will happen at the expense of production of investment goods and a relative decrease in the size of investment initiatives. It will be accompanied by changes in organization of investment plans. In 1983-85, the share of

central investments will decrease to 30 percent, and later to 20 percent. To a greater extent, according to tenets of economic reform investment initiatives will pass into hands of independent enterprises.

Decisive scientific-technological progress is absolutely necessary in processing industry. Even as we have reached a high technical-organizational level in mining industries--Vice-Premier Madej said--the world passed us by in the processing industry. The Polish economy must be enriched with new generation technology. This necessity is a challenge for Polish scientists he said.

Scientific progress gives an answer to the question--what we can offer for sale on world markets? In the past, we lived from exports of coal and other raw materials and agricultural produce. We stopped exporting food in the 1960's. Coal remains but we will be unable to extract more than 180 or so million tons yearly for the next several years. The economic reconstruction should give new trump cards for Polish exports.

These trump cards are absolutely necessary to achieve an elimination of our indebtedness to the capitalist countries by 1990 and also, to make goods produced domestically better serve to satisfy the needs of society.

9032
CSO: 2600/583

NEED FOR SELF-SUFFICIENCY IN FOOD SUPPLY STRESSED

Policies, Aims

Warsaw IDEOLOGIA I POLITYKA in Polish No 3, Mar 82 pp 26-28

[Article by Stanislaw Zieba: "Food Self-sufficiency of the Country--the Main Goal of Agricultural Policy"]

[Text] The belief in the key role of agricultural development and food-stuffs production in successfully solving social problems in our country is becoming increasingly apparent, though not yet commonly accepted. Despite tremendous grain imports, mounting difficulties in the food market have given rise to a near collapse situation. Economic ties between the city and the country have loosened precipitously. Speculation in foodstuffs has assumed threatening proportions. In this time of increasing economic difficulties, putting an end to further destructive processes in agriculture and mapping out a concept of socioeconomic renewal in rural areas became the order of the day for the party and the ZSL [United Peasant Party].

In the fall of 1980, village meetings were held all over the country where peasants discussed the assumptions of "The Theses..." on agricultural policy. These assumptions were also discussed by PGR [State Farms] and RSP [Agricultural Producer Cooperatives] work forces, the scientific and foodstuffs industry communities and cooperators. As a result of this debate the Politbureau of the Central Committee of the PZPR and the Presidium of the Main Board of the ZSL adopted the "Theses on the Nodal Problems of Agricultural Policy, Agriculture and the Food Economy" in January 1981.

This document states that "actions to promote agricultural development have not been persistent, there has been a lack of clear agricultural policy. Those were the main causes of unsuccessful agricultural development. Protracted indecision in the strategic reorientation of the economy toward a proagricultural trend, willful investments, disregard for economic laws in both production and consumption are the primary source of the deep crisis our country has found itself in.

An in-depth critical analysis of the pre-August agricultural policy allowed us to work out, with the participation of the rural community, new principles of such policy, taking into account the needs of agriculture, the social

aspirations of the rural population as well as the attainment of food self-sufficiency in the country.

At a joint session of the Politbureau of the PZPR Central Committee and the Presidium of the ZSL Main Board on 1 December 1981 a comprehensive review of the "Theses", adopted a year before and further reinforced by the decisions of Ninth Extraordinary PZPR Congress, was carried out. This review suggests a general conclusion that the highest political priority is not to repeat the mistakes of the past. There is a need to avoid the multiplicity of priorities, safeguarding the priority status of the extractive industries, power generation and agriculture, in accordance with the accepted trend in economic policy. Also, there is a need to pry the economy loose from the directive-distribution inertia, to implement economic reform, stable agricultural policy and proagricultural orientation of the economy at all levels, despite tremendous difficulties.

What is meant by "stable agricultural policy" in light of the above-mentioned review?

Item one: continuous material prerequisites for expanded reproduction must be created in all branches of agriculture in the way of switchovers in industry and directing a far wider stream of manufactured means of production and capital goods adjusted to the varied areal structure of our multisector agriculture, changing natural conditions, labor force and differentiated equipment levels in live and mechanical draft. Industry, as was reinforced by a political directive, must double over the current 5 years the share of its production capacity earmarked for manufacturing means of production for agriculture and foodstuffs processing. Industry must also better adapt the structure of production to the needs of agriculture in the field of raising management efficiency and better use of capital assets in the farming sector and the entire food economy.

Item two: continuous and comprehensive profitability of all agricultural subsectors to be ensured in conjunction with natural processes of increases in production costs and upkeep. This will be accomplished, as has already been proven in practice, through moving prices where varying costs of production will be reflected in the procurement prices of food.

Item three: even-handed treatment of all [social] sectors, continuous good prospects for private family farms and creating necessary conditions for the strengthening and development of the socialized sector of agriculture. The problems of comprehensive and rational land development, of guarding the land from diversion to nonagricultural uses, land reclamation, irrigation and improvement of agricultural practices, especially in smaller farms, assume the greatest significance.

Item four: preserving parity of incomes between the agricultural and non-agricultural population accompanied by ensuring the socially necessary increment in productivity, increase of the average size of holding and elimination of counterproductive field patchwork, and, above all, increase in the productivity of every agricultural job. This productivity is

reflected by the amount of surplus market production sold by peasants on the basis of contracts in the socialized market. It is accepted that it will become an important indicator in ranking the farms and a permanent measure of supply with agricultural and manufactured means of production.

Item five: the creation, in accordance with the idea of economic reform, of comprehensive preconditions for a parametric system of managing production processes in all agricultural sectors and a self-governing management of production and communal-social services in rural areas, primarily through the units of agricultural education has a great role to play which can, relying on social activity of rural self-government echelons, ensure progress in acquiring knowledge and improving professional skills of farmers and work forces of state and cooperative agricultural enterprises.

Item six: facilitation of the rise and release of collective self-governing social effort, organization of volunteer work for farmers, rural women and youth with an eye to improving conditions of work and life; self-governing solving of their problems by rural population in the name of their own and the common good, of social progress in rural areas.

Item seven: ensuring marked progress in the efficiency of utilization of the entire production potential in all groups of farms, private family as well as socialized.

What are the characteristics of the current production situation in agriculture and what conclusions can be drawn from it?

Unfavorable climatic and economic conditions in previous years, overextended auxiliary production in animal husbandry developed on the basis of imported rather than domestic grains, tremendous subsidies to food consumption have all contributed to a drastic reduction in gross agricultural production. Marketed agricultural production, especially in the private sector, did not only fail to increase but plunged precipitously in 1981--a year with favorable natural conditions for agriculture--due to mounting political turmoil, recurrent strikes and a flareup of speculation. It decreased incomparably lower than the level of gross production would suggest. This caused a difficult situation in food markets e.g. simultaneously an increase of stockpiles on the farms.

Grain has been and will remain the issue of paramount importance. It has always signaled and will continue to signal not only the general production situation in agriculture, but the general nutritional condition of our society. This is especially important in Poland due to a bleak outlook for grain imports. Let us notice that gross grain stockpiles from the 1981 harvest amount to 70 million tons according to GUS (Central Statistical Office) estimates. This is 7 million tons more than in 1980. Despite this fact, market production was remarkably smaller and did not exceed 1.45 million tons by February 1982, or amounted to less than one-half of planned annual procurement, or was more than one-half less than the average of previous years. At the same time, annual consumption of grain in Poland in

the form of baked goods exceeds 5.5 million tons. Only a few know that even provinces dubbed "agricultural granary," such as Leszno, Opole or Poznan do not procure enough grain to cover their own needs. This shameful truth was concealed for years. The state had to shoulder tremendous costs of monstrously increased grain imports from Western countries, largely from the United States. The production potential of domestic agriculture was underestimated. Therefore, our foreign-exchange debt kept climbing up. An example of this situation is provided by a comparison of procurement and deliveries for grain consumption in three selected provinces in 1981 (table 1)--and those are, as a matter of fact, agricultural provinces.

Table 1. Level of Self-supply in Grain Products in Three Agricultural Provinces (tons)

Tabela 1

Poziom samosuprodukcji w produkty zbożowe (w tonach)
w trzech rolniczych województwach

1. Województwo	1981 (rok kalendarzowy 5)		8. Dostawy produktów zbożowych w przeliczeniu na mąkę	9. Proc. samosuprodukcji
	6. Skup zboża	7. skup zboża w przeliczeniu na mąkę		
2. Skieriewickie	12 000	8 400	42 000	20
3. Piotrkowskie	12 000	8 400	53 000	18
4. Sieradzkie	36 800	14 800	36 000	48

Key:

1. Province
2. Skieriewice
3. Piotrkow
4. Sieradz
5. 1981 (calendar year)
6. Grain procurement
7. Grain procurement converted to flour
8. Supply of grain products converted to flour
9. Ratio of self-supply.

The current situation of our country in the field of grain production and procurement necessitates:

- the creation of economic and management conditions for the fast growth of gross and market grain production in all farming sectors and not only in the socialized sector. In early 1981, the state was forced to institute a grain loan in order to amass enough grain for grain products;
- striving for such a balance between grain production and the number of hogs which, in the face of further Western economic sanctions and, consequently drastically reduced grain imports, will enable us to protect the consumer market from the rationing of baked goods and simultaneously not only refrain from reducing the level of market production of pork, but to keep and even increase it, at least a little, for several years to come;
- the all-out reduction of losses, comprehensive implementation of savings measures and improvement in the production, trade and consumption of bread and also of grain products. Until recently, bread purchased for a mere pittance and thrown away everywhere in urban dumps was a manifestation of degradation in the food economy. This can never again happen.

Grain is a synthetic indicator of the general level of crop production. This level is unsatisfactory; it is below the one that natural conditions and the supply of manufactured means of production might suggest. In many regions, agricultural engineering is neglected on private and socialized farms alike. On tilled areas, none of the planned changes toward the growth of areas under grain have been achieved over the last years. At the same time, results in increasing the yields have been minute. Let us assume that a precipitate decline in the total herd in 1981 compared to 1980 (by 2.8 million hogs and 850,000 head of cattle) and certain growth in the gross yield of grain and fodder combined decreased the gap between the neglected crop production and animal husbandry which was developed with an increasing share of imported fodder. Then, there is an opportunity to start a difficult process of restoring relative equilibrium between these two subsectors of agriculture, increasing the market surplus of grain earmarked for consumption.

Therefore, a general conclusion must be drawn to the effect that there is a permanent dependence between the development of animal husbandry and the production potential of the field. At present, all farmers are learning these truths anew, however, not without losses. This is especially true of farmers specializing in poultry production who will have to switch to other kinds of production due to the lack of imported fodder (corn).

There is a structural dimension to the direction of these changes and the balancing of growth rates in crop production and animal husbandry. Several conclusions and tasks follow from that.

Land as a nonreproducible production asset must be adequately used for production in its entirety. It should be the object of the utmost concern of farmers. If the land is to be respected, it must be priced according to the class and location, the price being equal in the land turnover of the State Land Fund [PFZ] and in the free market, where prices accepted by farmers have traditionally been derived from the price of grain. Also, economic aspects should be restored to the land tax. It should be increased adequately and varied according to soil characteristics and location of the farm. The tax must be a powerful economic lever at the disposal of the state.

The land must yield good harvests in the all-social interest in all sectors, including inviolable family private farms. Therefore, a draft law is being prepared which will set in motion efficient economic and legal means facilitating the introduction of socially desirable changes in the agrarian structure, land reclamation and protection of land against diversion to non-agricultural uses.

The needs of the country in food require a perceptible increase of market surpluses of agriculture, especially private agriculture. One-fourth of land yields very low harvests and more than 1 million hectares of cropland are badly neglected--this is not serving the public interest. It cannot be that about 2.1 percent of all farms do not have livestock, reducing in this way the productive potential of land (lack of manure) and frequently producing less foodstuffs than the farmer and his family need. Almost 1 million

farms sell nothing or just symbolic quantities of foodstuffs to the state. Only 11,000 farms sell foodstuffs worth 1 million zlotys annually, or 0.3 percent of all farms (Table 2).

Table 2. Volume of Crop Sales in 1980 (according to BGZ [Food Management Bank I])

Tabela 2

Wartość sprzedanych produktów rolnych w 1980 r. (wg BGZ)

1 Wartość sprzedanych produk. zł	2 Liczba gospodarstw w tys.	3 Proc.
0	547	22,0
15	404	14,0
15-50	725	29,1
50-100	500	17,8
100-200	401	14,0
200-290	142	4,8
290-470	94	3,2
470-700	32	1,0
700-1 mil.	11	0,3
1 m-	11	0,3

Key:

1. Volume of sales, thousand zlotys.
2. Number of farms, thousand
3. Percentage share

Improvement in the productivity of land is also associated with the necessity to couple larger investment efforts aimed at regulating water ratios in the soil with a comprehensive extension of social and self-governing concern among the farmers with the rational maintenance and operation of watering and land-reclamation equipment. Water companies have a significant role to play here. They will be reinforced through legal regulations concerning their activity and the necessary equipment and technical support.

Rational agricultural engineering, organic fertilizing, mechanization of soil working, cultivation and crop harvesting are of tremendous importance in raising land productivity. The importance of agricultural engineering is growing all the more since, in a realistic perspective, chemical fertilization agents will be scarce this year and in the several years to come. Deliveries of pesticides can, in the perspective of the nearest future, play a supporting role (possibly, with the execution of horticultural production and industrial crops, where the necessary level of pesticide delivery will be kept).

Independent decisions will be made on a case-by-case basis with regard to the crop mix by farmers or self-governing socialized agricultural enterprises. This notwithstanding, economic and social requirements of growing economic efficiency will bring about them being increasingly guided by the criterion of maximizing energy units and protein yields from each hectare. Papilionaceous crops which increase protein output and facilitate humus formation, which brings out the natural productivity of soils, play a tremendous role in efficient production, especially on light soils. This means now and will

mean in the future the necessity to increase areas under efficient crops selected in accordance with varying soil and climatic conditions. Similar considerations of growth in land productivity suggest the necessity of ascribing due significance to liming and magnesium upgrading of highly depleted soils, especially light soils.

Our agriculture is highly differentiated geographically. This differentiation occurs in many fields, for example, in the size structure of holdings, soil survey, labor supply, fixed assets. However, this differentiation cannot justify tremendous discrepancies in the efficiency of production, which is in general unsatisfactory in our entire agriculture. This efficiency measured by the net agricultural production per convertible hectare of agricultural land displays a striking magnitude of differences. For example, in the marketing year 1980/81, Leszno Province obtained 25.7 grain units of net agricultural production per convertible hectare of agricultural land, whereas Poznan Province obtained 24.5 and Opole Province, 23.8. At the same time, Kielce Province obtained 10.8 units, Radom Province, 10.3 and Krosno Province, 10.3.

It can be conjectured that this differentiation was due to factors of a subjective nature, primarily to the worse organized and less productive work of agriculture and pertinent infrastructure. If a more detailed analysis is made, it turns out that still larger differences occur in the levels of production of particular gminas [parishes], villages and farms, where next to a good farm, a decrepid neglected attribute of old Galician poverty drags out a wretched existence. It is in the social interest to change this picture.

There is no other way to implement the assumptions of agricultural policy but to comprehensively increase the efficiency of production. We, therefore, see the necessity to arrange legal and economic instruments in agriculture, to distribute fixed assets promoting production growth among particular regions and farms, to organize services in rural areas in such a way that one full-time worker in agriculture could feed at least 12 persons and not 7, as is the case today (now this indicator stands at 15 in both Czechoslovakia and the GDR). This is what the entire society requires of agriculture. Agriculture must face up to the challenge of the time. The national economy must assist agriculture in this venture.

Therefore, it has been decided, in accordance with the requirements of objective criteria for accounting and the economic reform, to establish the level of net agricultural market production per convertible hectare as the primary indicator of efficiency and simultaneously as the primary statistic for providing agriculture with fixed and turnover assets, at both the macro- and microlevel. This decision was made on the basis of substantial research supplemented by interviews with private farmers and work forces of the PGP and RSP.

It is accepted that multiyear contracting becomes a permanent form of linking farms with the state socialist economy. In the process, the administrative-directive approach to organizing production is decidedly abandoned in favor

of parametric management. The system of volunteer contracts ensures conditions for the farmers to select freely their market products taking into account natural and economic conditions and also the specialization of the farm. Principles of higher prices for contracted products, exclusive supply of manufactured means of production to farms and also credits, rate reductions, sales of land from the PFZ installment purchases of tractors and agricultural machinery and other preferential measures are associated with contracting as a tool permanently binding together the planned economy of the socialist state and farmers' enterprise.

Equality and partnership in the contractual relationship between the state and the farmers require that the activity of raw-material-supply branches of industry and the cooperative movement be brought back for good. Their work will be supported by self-governing activities of associations and branch organizations of breeders and growers. In this way, the restoration of traditional mutual links very strong in the past, and of close cooperation between industry and cooperatives, on one side, and breeders and growers, on the other, can be started. The orientation of the agricultural service and the new reconstruction of permanent ties between the farmer and the food-stuffs industry and cooperatives are subordinated to this goal. Mutual cooperation is to be based on the principles of multiyear volunteer contacting, care and professional assistance, supply of guaranteed means of production and procurement of agricultural products on more favorable conditions, carried out in a preplanned manner. Among other things, creating an environment that actively promotes production in small farms and facilitates the development of a local network of food-processing plants is important. This is especially so with regard to cooperatives and small-scale processing plants organized by craftsmen and also to companies formed by physical persons.

The production capacity of agriculture, of all its sectors is undoubtedly higher than the level already attained. Utilization of this capacity will depend on the supply of necessary means of production in no lesser degree than on the farmers themselves and on the unit of agricultural service. A substantial increase in the production capacity of industry earmarked for producing agricultural equipment is a process that takes a long time. However, in the way of persistent implementation of the course toward a pro-agricultural structuring of industry, the current difficult stage in the entire economy requires that agriculture be supplied with at least the necessary means. These means can bring the necessary results relatively fast and with lower outlays. Also, they can protect the economy from tremendous losses in food production.

Lime and artificial fertilizer are issue number one, with availability, proportions and stability of supply in the picture. Domestic resources of lime-magnesium fertilizer can and should be tapped to a larger degree. Local initiatives can and should be developed comprehensively in the provinces (for example, the dolomite grinding started up in Rzeszow and Wloclawek provinces or large-scale utilization of waste lime in Bydgoszcz and Krakow provinces). It is also acutely necessary to mobilize the efforts of work forces in enterprises of the ministries of chemical and light industry, iron

and steel industry and construction and also transportation with an eye to increasing output and haulage of lime fertilizer, so as to improve solid reaction and its lime content as early as this year. This will determine the effectiveness of all agricultural engineering measures.

At present, agricultural and transportation machinery out of commission due to the shortage of spare parts, rubber tires and batteries, is the most formidable obstacle to the rational use of agricultural production assess. Data of the Ministry of Agriculture and Food Economy show that, for example, more than 50,000 tractors, or about 10 percent of the total, and more than 21 percent of tractor-drawn trailers are idle due to the lack of rubber tires. Therefore, delivering spare parts to agriculture, even at the expense of producing new equipment, is the most urgent task.

There is a high density of horses in private agriculture (9 horses per 100 hectares of agricultural land). Due to the tremendous parcellation of agricultural land holdings in almost the entire middle and southeastern sections of the country, relatively correct agricultural practices can be ensured through a wider application of horse-drawn equipment. Industrial and agricultural enterprises are starting or are preparing to start production of the basic set of horse-drawn equipment. These efforts are not adequately coordinated in the territorial and branch aspects. In this matter, not everything depends and, moreover, cannot depend on the central echelon. Farmers agree that at present a solution for the production of horse-drawn equipment for soil work which has been abandoned over the years is one of the most important conditions for raising labor productivity in private agriculture, especially in minor and smaller farms. Industry promises to solve the so far very troublesome problem of the lack of hand tools and simplest agricultural implements in the course of this year. The problem, however, is larger than that.

The development of pesticide production on the basis of domestic raw materials such as sulphur, copper and zinc can bring about a reduction in the currently very large losses in crop production (the Institute for Plant Protection estimates them to be about 20 percent). Initial studies suggest that initiative of the work forces can be relied upon in this matter. Also, there are concrete analyses and draft solutions which hold some hope for breaking out of the vicious circle of decline. However, economic incentives for such production should be introduced, designs elaborated within the framework of the inventors and technical progress movement should be utilized, the necessary fund for modernization and investment should be allocated. These measures are possible and necessary, though it is known that systemic solutions entail the implementation of economic expansion in the pesticide industry.

Tremendous losses are also incurred by agriculture in fodder management. Due to the lack of opportunities for solving quickly complex investment and technological problems associated with the startup of production of amino-acids, biostatics, many vitamins and growth stimulants, the simplest means should be provided for agriculture, such as mineral mixes, pasture salt licks, disinfectants, preservatives and plastic foil needed in silage production and

for early vegetables grown under panels. To ensure rapid progress of these efforts in their entirety, it is necessary to introduce suggested monetary, foreign-exchange and raw-material preferences for the chemical and machine-building industries with regard to their production for agriculture. The chemical industry is at present the weakest spot in agriculture-related facilities.

Agricultural self-government is of outstanding importance in the life of rural areas. As a result of accepted statutory arrangements, agricultural circles have become an independent self-governing organization of the farmers. Representing rural concerns, they started working, besides traditional professional aspects, on many tasks in the field of social supervision, for example, on land use, utilization of the means of production and also, in accordance with the will of village meetings, on organizing volunteer work using the moneys of the State Fund of Agricultural development, suggesting improvements in production, supply, sales and production service management.

The current reform of prices for the means of production, agricultural product and services prompts the self-governing bodies of agricultural circles to analyze comprehensively the work of cooperative service facilities. The self-governments of agricultural circles decide themselves on the detailed price lists for agricultural services in their subordinate cooperatives. It should be specifically stressed that self-governing bodies are guided in their pricing decisions by the concern with a necessary level of profitability of the cooperative. Consequently, this facilitates productive use of tractors owned by private farms.

Circles of Farm Wives [KGW] have traditionally been very active. Their present program calls for an improvement in preventive health care, issues of nutrition and development in many fields of production, for example, chicken breeding and also for the development of professional improvement and qualifying courses for farmers, in cooperation with the WORP [Provincial Center for Agricultural Progress] and the agricultural service. On the initiative of the KGW, a discussion on the concept of rural social fund is getting underway in rural areas.

Groups of young farmers working under the auspices of the ZSMP [Union of Socialist Polish Youth] and ZMW [Rural Youth Union] are infusing new life into their activities after a longer period of stagnation. The social support base of associations and branch organizations of growers and breeders is broadening. However, the contractual tasks at hand require a more efficient input from the associations on the program of the level of concentration and progress in production in particular rural chapters of breeders and growers.

Rural supply and sales cooperatives, horticultural and milk cooperatives are beset by considerable difficulties in meeting economic targets. Rural areas demand that these cooperative units discharge their responsibilities as organizers of production and distribution of the means of production and sales of crops with more order and efficiency. This is the main task of the self-government and administration from the scope of their activities.

The earliest introduction of the new economic, financial and organizational system occurred in socialized agricultural enterprises. The PZPR were the first in the nation's economy to introduce economic reform as early as 1 July 1981. A wider display of the advantages of the new system is restricted due to difficulties in supply of raw and other materials and the general disarray in the economy in 1981. Nonetheless, the growing goodwill of work forces toward the new economic and management arrangement is already showing. In the current situation in socialized agricultural enterprises, their attention is centered on ensuring higher overall social efficiency. As a result, there is high sensitivity to any attempts of the state administration to intervene and strive to form associations.

Social progress in rural areas and elimination of differences between urban and rural areas which have formed in this regard are the highest goals of agricultural policy. This is the strategic goal of agricultural policy. The land reform, elimination of illiteracy in rural areas, opening access to schools and colleges for rural youth, development of folk culture are only the few most important signs of progress in rural areas in the years of People's Poland. Also significant are social achievements, such as free health care and pension and annuity provision for the rural population. In this way, conditions of work and life of the farmer and his family have been permanently improved step by step, along with the increase in the resource of the people's state.

Despite the progress so far, much still remains to be done in this field. New social, educational and cultural problems emerge in the countryside and require a new approach to the solving of these problems. It will not be easy to solve these problems in a time when the country is overcoming a deep economic crisis. Nonetheless, there are matters which cannot be postponed. This is why the PZPR and the ZSL guided by the principles of joint agricultural policy are handling these problems. Let us point out the most important issues and the latest achievements in this field.

First of all, in accordance with the desires of the rural population, the task of reforming the pension system for farmers had been undertaken. This is an immensely complicated problem that permeates almost all aspects of social and economic life in the countryside. The main task is to reconcile suggestions of the new principles of social security for the farmers with the general system of social security which is in effect in our country. Principles under discussion should not be in mutual conflict, but should supplement each other in working toward the evening out of social conditions and also toward the development of agricultural production.

One of the draft pension systems for farmers is based on the use of a comprehensive pension quota derived from the research on the official minimum while simultaneously giving the farmer a free hand in choosing the amount and scope of retirement benefits which will be pegged to the installments he pays in. Draft laws on social security for farmers are being considered by parliamentary commissions. The issue will have to be decided soon.

Regardless of this systemic changes, current agricultural pensions have been increased extemporaneously. Monetary services to farmers who turned their

farms over to their heirs before the law on social security for farmers was adopted have been raised to the level of minimal retirement benefits.

Recently, work has been undertaken on establishing the social minimum for farmers within the framework of systemic tasks. This minimum will be the foundation for income and social policies of the state with regard to rural areas.

Work in rectifying mistakes in educational policy in rural areas should also be noted. Many rural schools have been reopened in order to shorten the way to and from school for students. Agricultural schools have again returned to the proper patronage of the Ministry of Agriculture. Much still remains to be corrected in education, since today about one-quarter of those employed in rural areas have not completed primary schools. Agricultural skills of many farmers are very limited; there still are few courses and workshops for the working population. These problems will have to be solved more efficiently. In recent years, health care facilities have been successfully developed in rural areas. The quota of health resort slots for farmers has been increased, though the need for preventive care is tremendous.

These facts alone testify to the persistent striving to improve the conditions of life in rural areas and to humanize agricultural work despite considerable economic difficulties in the country. It is no secret that the future of the Polish village will be decided in the sphere of social and living conditions. Whether young people will want to stay in rural areas and permanently devote themselves to the agricultural professions depends to a large degree on the social, educational and cultural condition of the countryside. Therefore, multifaceted activity of the state, the rural community and rural sociopolitical organizations will have to develop in this direction.

Freedom From Dependency

Warsaw ZYCIE GOSPODARCZE in Polish No 9, 10 of 21, 28 Mar 82

[Two-part article by Slawomir Gburczyk, Tomasz Lonc, Waldemar Michna, Augustyn Wos: "In the Direction of Food Self-sufficiency] [21 Mar 82 pp 6]

[Text] A food war has been declared on Poland. This is not meant to include only the latest economic sanctions against our country instituted by the Reagan administration after the imposition of martial law. These decisions are a logical consequence of the political course which the United States has followed since proclaiming that food aid (trade in food) was treated by the United States as a political weapon.

"Food is a weapon, it is at present one of the main negotiating levers at our disposal," stated E. Butz, secretary of agriculture in the Nixon administration. The extension of political rivalry to the economic sphere and,

specifically, to the food trade will undoubtedly be a permanent feature in the international political arena in the decades to come. Therefore, the current economic sanctions are not an isolated episode, but rather a particular example of the general course the United States has taken. In the future, similarly to the developments so far, there will be ebb and flow periods in the implementation of this policy depending on the changing political situation in certain importing countries. The doctrine of selective treatment of particular socialist countries will certainly continue to apply. However, it is beyond any doubt that in the foreseeable future the United States and other capitalist countries will use food as a means of political pressure with no scruples. Respective conclusions should be drawn from these facts.

External Environment

It is beyond doubt that economic dependency of Poland on foreign countries is a fact with significant and far-reaching implications, not necessarily of an economic nature. About \$7.5 billion in credits which we received for the imports of grain fodder and other foodstuffs in the second half of the 1970s are a tremendous burden on our trade balance and make surmounting the crisis more difficult.

The problem is still more complicated, since the socialist countries as a whole are extremely heavily dependent on the United States for grain deliveries. In the years 1974-1980, these countries (excluding the USSR) purchased 96 million tons of grain, of which 43.7 million tons was from the United States and 31.1 million tons of oleaginous crops (including oil cakes), of which 12.3 million tons was from the United States. Combined expenses for imports from the United States amounted over that period to \$8.3 billion. Of this amount, the largest quota, \$2.8 billion, went to Poland. The situation has become particularly difficult in Poland, Czechoslovakia and the GDR. Animal husbandry in these countries has become dependent to a considerable degree on fodder imports, one-third of which come from the United States.

In the opinion of American experts, the U.S. foreign policy leaders did not strive to secure concrete and politically spectacular concessions while considering the opportunities for using agricultural products sales to socialist countries as a political lever. Instead, they consciously embarked on shaping the dependence of the food economies of the socialist countries on U.S. imports in the long run. With regard to Poland, this idea has been a total success. Part of the blame for this goes to the Polish economic policy of that time.

In the years 1976-1980, we purchased abroad more than 40 million tons of grain, of which slightly more than 3 million tons was from the socialist countries. Purchases of powder, oil cakes and fish meal amounted over that period to 8 million tons, all of it from capitalist countries. As a result, the negative balance in trade with agricultural products and foodstuffs accounts for one-third of our present debt to capitalist countries, whereas in 1975 it was less than 10 percent. Until 1973, we had a positive balance

of trade in agricultural products and foodstuffs with developed capitalist countries. Since 1974, this balance has permanently been negative. It has increased 13-fold by the end of 1981 (from 613 million to 8 billion foreign-exchange zlotys).

We cannot keep on going in this direction. Due to both political and economic considerations, the situation when one-third of meat output and consumption depends on imports of grain and fodder cannot be permanently tolerated.

What was the origin of the development strategy in the food economy, which led to this state of affairs in the 1970s? The concept of fast growth in meat consumption was its linchpin. Meat consumption became the determinant of the standard of living and a symbol of social progress of certain population groups. Meat became a "political" commodity. Increases in its production and consumption were an important test of the credibility of social policy in these years.

... and Internal Environment

The society demanded an increase in the availability of food and, especially, meat. This was a social fact which could not be ignored. However, the concept of consumption with a permanently increasing share of meat is one of the most expensive versions of providing nutrition to population. Meat is a very expensive product (from the point of view of social costs of production), due to which any increase in meat consumption makes the overall diet "more expensive." The larger consumption of animal products is, especially meat, the fewer persons can be fed with the output of 1 hectare of agricultural land.

The more we adjust the structure of consumption to the conditions of agriculture, the better we can use the potential productivity of land. The decisionmakers were well aware of this fact, and the choice was made consciously. Indeed, over 6 or 7 years meat consumption per capita increased by about 20 kilograms. This was a very fast rate. However, equilibrium in the meat market was not achieved because retail prices were low. Due to this, pressure on the meat market intensified instead of decreasing. This forced further growth in production. This growth required increasingly larger imports of grains and fodder. The necessary increment of meat production could not be achieved on the basis of domestic fodder. Therefore, the growth of grain and fodder imports had to become an integral part of the accepted development strategy.

It was calculated that volume of agricultural production must increase at an average annual rate of 2.5-3.0 percent in order to meet the food needs of society and ensure the necessary increment in per capita consumption (with a fast population increase at a rate of 1.1-1.2 percent annually). In order to achieve that (with a permanent increase in the share of animal products), crop production, and especially yields of grain and other fodder crops, should grow at an average annual rate of 4 to 5 percent. Meanwhile, at the current level of production techniques, crop production can realistically

increase at a rate of 1.8 to 2.0 percent, with large oscillations from one year to another, which further complicates matters and makes it more difficult to maintain production equilibrium. The difference between the desired and the actual production of grain and fodder had to be covered by imports, which grew consistently to the level of one-third of total concentrated fodder consumption and exceeded the payments opportunities of the country, making its development dependent on foreign countries.

Rapid industrialization and urbanization of the country caused the demand for food to increase beyond realistic opportunities of domestic agriculture. It is not so much the absolute level of consumption as its structure that is at issue here. The food barrier in Poland emerged exactly in the structure of consumption, which turned out to be irrational from the point of view of nutrition science, very expensive and out of tune with the opportunities of national agriculture.

The strategic blunder committed in formulating the concept of providing nutrition for the people had its roots in the general strategy of accelerated economic development. Unfortunately, the investment boom brought about a deranking of agriculture in terms of development plans, and, on the other hand, stimulated demand for food to such a degree that it was impossible to manage without considerable imports.

The strategic decision rested on two pillars. Development of animal husbandry, even at the price of rapidly growing grain and fodder imports, was the first pillar. The second pillar was found in the forced growth of animal production by so-called industrial methods (farm production), which were marked by high grain-intensity and, on top of that, require high investment outlays, also from imports. Almost the entire increment in meat production in these years was achieved on industrial farms, that is to say, at a relatively high social cost. It could not be otherwise, because the assumed increment of meat production could not be achieved in so short a time in the traditional breeding system of private farming.

This led to the growth of intensiveness of outlays and social costs of agricultural production (in the years 1970-1979, the intensiveness of outlays of final agricultural production increased by 48 percent.) There was a major mistake in this concept. In the environment of capital shortages, expensive production should be equated with lower production, because there simply will be no funds to sustain further growth. Unfortunately, warnings given by the critics of this strategy in agricultural policy had to be borne out.

Neither agriculture nor, especially, the national economy were prepared for the implementation of this policy. The strategic blunder committed at the time was associated with creating technical reconstruction (switching to new production technologies) as no less than a condition for a rapid increase in agricultural production. Given the permanent lack of funds, this had to bring about a decline, not growth in production.

The accepted directions of industrialization downgraded agriculture, especially from the technological point of view. This blocked opportunities for

agricultural development. Simultaneously, industrialization created tremendous demand for agricultural raw materials and foodstuffs. In this way, the discrepancy between the needs that industrialization gave rise to, and the opportunities for increasing agricultural production, grew wider and wider. This issue is not confined to the 1970's. This is a structural problem in our economy, or it may be a certain regularity for the stage of economic development that Poland is passing through at present.

We do not know much about the nature of these dependencies. We tend to treat everything as human error, whereas studies on economic growth in various countries indicate that many countries which are highly developed today, went at some point through the same stage Poland is in now. The difference is that market took care of many complicated problems in their case. Specifically, no mistakes were made there of the kind which, in our country, is associated with arbitrary pricing and conscious (unfortunately frequently voluntaristic) shaping of consumption modes.

This is a very important statement, because it makes us aware of the fact that structural problems of the entire economy hold a key to the problem of food self-sufficiency. This problem cannot be solved within the scope of agriculture itself. Equilibrium in the scope of the entire national economy will shape equilibrium in the food supply.

Pushing the growth rate beyond domestic opportunities was unescapably bound to cause disproportions and slow down growth. This coincided with the environment in the credit market which was favorable for Poland. For example, in principle the entire imports of food and agricultural products from the United States were financed by special U.S. Government credits or by government-guaranteed bank credits. Poland accounted, by the end of the 1970s, for about one-third of all such credits granted by the U.S. Government. Reasons for and consequences of such a relationship of the two parties seem to be evident today.

The problem discussed here also has a purely economic aspect. According to the initial assumptions, imports of grain and fodder were to be financed by meat exports (the Dutch and Danish models). In fact, this has not occurred, because the needs of the country and demand pressure have been so high that the exportable surplus has been very small. The concept of sustaining meat production largely by imports of grain and fodder has not worked out in our country. Numerous technicoeconomic conditions which could have rendered this concept rational and efficient, have not been met. It is difficult to predict that these conditions will be met, taking into account the current state of our economy and forecasts of economic development in the years to come. On the contrary, we must reckon with the conditions growing ever worse. If these assumptions are correct, the concept of developing meat production on the basis of imported fodder is not realistic.

Self-sufficiency Is Necessary and Possible

Now, Poland has to consider changing the strategy of economic development in the direction of food self-sufficiency. Political and economic considerations alike suggest this.

Food self-sufficiency can be described as a state of continuous equilibrium of the balance of foreign trade in agricultural products and food (eventually, with the inclusion of means of production for agriculture), or as making agricultural development independent of imports, especially in key production fields. To our mind, the latter definition is proper. What is meant here is a formulation of strategy which will ensure the minimal possible dependence of agricultural development on foreign countries. Certainly, a tendency to self-sufficiency cannot be equated with economic autarky. Should we take the autarky approach, we will deprive ourselves of the benefits ensuing from the international division of labor (comparative costs.)

Will it be possible to achieve food self-sufficiency?

Polish agriculture already produces enough primary ingredients to ensure the attainment of food self-sufficiency. By primary ingredients we mean plant protein (consumed directly or converted to meat protein), hydrocarbons (fats), vitamins and other microelements. If we leave out the internal structure of the product which agriculture places at society's disposal we can state that 1,300 kilograms of convertible grain units suffice to adequately feed one person for 1 year.

According to A. Leopold, 1,100 grain units were produced in Poland in 1960 (of which 64 percent was converted into animal products). In 1970, this statistic stood at 1,250 kilograms (67 percent was converted into animal fat products). In the 5 years between 1971 and 1975, there was substantial growth up to the level of 1,430 kilograms of grain units per capita (of which 70 percent was converted into animal products). After that, there has been a drop in agricultural production, which can now be estimated at 1,330 kilograms of grain units per capita. Nonetheless, it is still at the level of gross demand, by which we mean an adequate level of nutrition. This means that at the current level of production of agricultural raw materials, all rationally justifiable social needs in food can be met, assuming that the conversion of plant products into animal products is at a moderate level (about two-thirds of the plant products available), and that this conversion is efficient. To sustain the growing demand for highly processed animal products, production of plant primary ingredients must grow faster than proportionately (about 4.5 kilograms of grain units must be used to produce 1 kilogram of convertible meat).

Polish agriculture produces the amount of primary ingredients which is needed to feed the nation. If there is a shortage of food, two factors are responsible for it:

--the tangible structure of agricultural production is not adjusted to the structure of demand;

--large losses of primary nutritional ingredients are incurred in various elements of the food economy.

Achieving food self-sufficiency under such conditions does not hinge primarily on forcing growth in the production of agricultural raw materials. It requires that the two above-mentioned issues be resolved. Certain organizational activities and changes in economic levers affecting agriculture are

needed for that. Also, and, perhaps, first of all, funding is necessary to eliminate the barriers which make it impossible to utilize rationally the agricultural raw materials produced. Reasons for weakness in the food economy are found in the faulty structure of the production apparatus.

Extensive Growth?

Let us consider at first a strategy of solving the problem of food and self-sufficiency in the way of growth in agricultural production. In theory, this is possible, but is it realistic and economically justifiable?

The opinion is making the rounds that growth of agricultural production is the solution. Other solutions are not even being considered. All known programs of development of the food economy so far were based exclusively on the strategy of extensive growth in agricultural production, frequently without taking into account social costs. Specifically, it was assumed that the other side of this peculiar balance, that is, consumption, was an independent variable; that it constantly had to grow, and grow as fast as possible. The truth, however, is different. In the process of social development, production indeed adjusts to demand, but at the same time demand (consumption) adjusts to production. This is true because only things produced can be consumed, but not just that; also, pushing consumption beyond realistic limits is the simplest way to depress consumption and disturb the equilibrium. While striving for food self-sufficiency, it should be assumed that all elements of an economic strategy are variable.

We have stated that solving the problem in the way of accelerated growth rates of agricultural production can be considered. Indeed, this is possible in theory, but we must understand that this is very costly and at present beyond the reach of our economy. If we assume that all other elements of the strategy are fixed and only agricultural production is increased, then final net agricultural production must grow at a rate consistently higher than 2 percent annually. Needs associated with natural population increase should be met (1.1-1.3 percent annually), plus the needs due to the growth in the real income of the population and also additional demand associated with changes in the structure of consumption (a growing share of highly processed products). With these requirements in the picture, the 2 percent level is rather minimal. To see how formidable and difficult a task that is, suffice it to say that in the second half on the 1970s the net final agricultural product practically did not increase. Therefore, the average growth rate was close to zero.

It is difficult to extrapolate the proportions of past economic growth into the future, but the last decade can shed some light on the issue. In the 1970s, agricultural final product grew at an average annual rate of 1.94 percent, close to what we consider the minimum for the future years (given that the above assumptions hold). It is worth considering that a less than 2 percent growth rate of agricultural production required an 8 percent rate of growth in technical development of labor and a 5 percent average annual growth rate in the outlay intensiveness of production. Capital intensiveness of production stood at 5.80 at the time. It follows from the analysis

that capital outlays for purchased inputs into agricultural production must, under such circumstances, grow 4.2 times faster than agricultural production. Therefore, there is a question whether in the next few years we will be able to sustain such a growth rate of capital investment.

It can be stated that this will not be possible without researching deeper into the balances. The capital-intensive model of agricultural development in Poland must be abandoned, at least for the current decade. We do not see an opportunity to keep the 2 percent rate of growth of final net product in this traditional way. Only the savings (low material-intensive) version stands a chance of succeeding. In this version, the socially desirable production is secured not through forcing an accelerated growth rate of agricultural production, but, to a large degree, through reducing losses and changing consumption adequately. A combination of these three elements holds a key to solving the food problem of the 1980s.

Reduction in Losses--the Most Inexpensive Solution

This argument has been put forward in professional scientific literature for a long time, but it is received with disbelief and even with caution. It is not overly spectacular, it does not call for a wide stream of modern machinery or gratifying indicators of investment growth, but rather for strenuous savings down to the smallest elements of the food economy, for everyday thrift and a strict mode of cost effectiveness based on "unadulterated" prices of capital goods and products.

Everybody knows that large losses are incurred in the food economy, but nobody knows their real magnitude. Adequate precise research in this field is not being made. A definition of losses has not even been agreed upon. Among them, there are losses most frequently called natural wastage, which are associated with technology. They are unavoidable at the current level of production technologies. These are usually small quantities, from a fraction of one to several percent, depending on the product. Eliminating this wastage is not economically justifiable, since it entails high cost.

These losses are not the problem in a contemporary food economy. These losses present a problem for which man is to blame and which result from an improper use of existing stockpiles and attendant high cost, from the wastage of a portion of the commodities harvested and produced, for example, as a result of bad storage, from stopping or failing to undertake activities ensuring growth of food production from existing stocks, from choosing inadequate production technologies, from the shortcomings of the accepted system of organization and management which usually leads to lowering motivation and reducing interest of the people in production results.

It turns out that these losses in the food economy are large enough to be able to bring about a perceptible improvement in the food market, if reduced slightly. This does not require costly production growth. Reducing losses is, therefore, the simplest and the most inexpensive way to increase efficiency.

From the economic point of view, we can classify losses into three groups. The first group consists of losses which can be eliminated with no additional investment, but with more diligence and better organization. Losses which can be eliminated with some additional investment, the latter being lower than the price of the product, belong to the second group (in the scale of the entire economy, the marginal cost of producing a given good must be the reference point, not the price). The third group consists of losses in the case of which the cost of recovering a unit of the product exceeds the price of the product.

Boundaries between these two last groups shift due to changes in the prices of agricultural products and means of production.

In our considerations, we will leave out the third group of losses and also those items from the second group where the elimination of losses encounters a technological barrier or requires capital which we will not be able to provide in the short run. Therefore, we will try to outline only the losses which can be eliminated without major investment and with economic efficiency. Despite such considerable restrictions, quantities in question turn out to be appreciable, which can be of essential significance in solving the food problem in our country. Three to 4 million tons of convertible grain units are at stake, or 5 to 7 percent of total crop production, which corresponds to planned outputs from a 100,000 to 130,000-hectare area. This is the area by which the production potential of agriculture could "increase" without investment. From the point of view of statistics, this area can provide food for between 190,000 and 240,000 persons. From 390,000 to 520,000 tons of convertible meat can be obtained from the 3 to 4 million tons of grain units.

To visualize the magnitude of the problem, yet another calculation can be made. Three to 4 million tons of grain units translates into a large loss of plant protein, which we must produce in the country at the cost of import imported grain-generating inputs or import this protein from abroad. The price of 1 ton of grain units in imported grain and fodder is now estimated to be 450 foreign-exchange zlotys. This makes the value of lost protein amount to from 1.4 to 2.0 billion foreign-exchange zlotys, or from \$370 to \$500 million in the low 1980 prices. Now we have to pay much higher prices. This is not a hypothetical calculation. So far we have been buying this protein and paying for it by our high indebtedness. Under the present circumstances, this foreign-exchange estimate has real meaning.

Are the 3 to 4 million tons of grain units that we can reach for an appreciable quote? Besides the above-mentioned arguments, it should be added that Polish agriculture needed as much as 15 years to achieve an increment in grain harvests equal to the amount of current losses in crop production. If we wanted to make up the shortage only in the way of production growth, we would need to have at least 10 years of reserve time. We do not have that time, and this circumstance predetermines the choice of a development strategy.

We have been discussing only losses which can be avoided, estimated at 4 to 5 percent of gross grain production, 10-15 percent of green fodder production

and 4 to 5 percent of other crop production. Actually, total loss is estimated to be at least two times higher. Let us look into this issue in more depth.

Grain loss in storage in the nonsocialized economy is estimated by the Office of Material Economy to be at least 10 percent. To eliminate these losses, capital investment will be needed for constructing granary dryers, grain silage facilities, etc. To avoid the portion of loss attributable to harvesting and on-farm transportation, the number of combined harvesters and transportation vehicles should be increased considerably. The combined efficiency of such investments would undoubtedly be higher than that of the investment necessary to obtain an equivalent in production increments. In the current situation, however, no radical increase in investment in the production process can be expected. This direction of investment should become a priority as soon as possible, but for now the real opportunities to reduce losses should be sought primarily in motivation-oriented activities, organizational arrangements and such improvements in production processes which require only small additional inputs of currently available means of production.

The difference between the average and the minimal loss amounts to 5.9 percent with a combined harvester, 8.2 percent with a sheafer, 18.2 percent with a reaper and 18.0 percent of biological yield with a scythe (according to S. Jelinowski et al "Rye," PWRiL [State Agriculture and Forestry Publishing House], 1972). Assuming that with a little more diligent harvesting, better preparation of machinery and better organization of labor losses can be reduced by one-fifth or one-fourth of the difference, losses of grain in harvesting could be lowered by 600,000 to 110,000 tons with only a small increase in outlays. Another 50,000 to 70,000 tons of grain can be recovered in grain handling and transportation by reducing losses in the same proportion. Finally, assuming that losses during on-farm transportation and storage which can be avoided with small investments amount to between 1 and 1.5 percent of gross production, a total of between 200,000 and 290,000 tons of grain can be obtained in addition. At a relatively low cost, grain losses could be reduced by between 850,000 and 1.07 million tons, increasing in this way the availability of domestically produced grain by 4 to 5 percent. Assuming even the modest opportunities of growth in investment and working capital for the protection of production processes until 1990, this amount can at least be doubled.

Losses incurred in producing bulk fodder exceed those in grain production. For example, depending on the mode of drying clover (on the ground, on beds, bucks or fences), loss of dry mass fluctuates in the range of 4 to 40 percent of organic substances--3 to 41 percent, of raw protein--9 to 31 percent, of protein proper--7 to 24 percent and of nonnitrogen extractive compounds--from 10 to 50 percent (see S. Starzycki "Clover," PWRiL, 1981). The combined losses of digestable nutrient matter amount to, with correct management, between 10 and 15 percent in silage and between 6 and 10 percent in fan drying (see S. Slominski "Meadow and Pasture Management" PWRiL, 1969). In the case of bulk fodder, reducing losses at the price of relatively small investments is much easier than in the case of grains. Additional outlays for drying

on scaffolding, between 10 and 15 percent in silage and between 6 and 10 percent in fan drying (see S. Slominski "Meadow and Pasture Management" PWRiL, 1969). In the case of bulk fodder, reducing losses at the price of relatively small investments is much easier than in the case of grains. Additional outlays for drying on scaffolding rather than on the ground or for silage instead of natural drying are inordinately low compared to the effects received. There still are considerable reserves in the opportunities for improvement in green fodder hauling, especially in the socialized economy. The necessity to haul the fodder, which causes enormous losses of nutrient matter, is often a consequence of the in adequate structure and organization of cattle breeding.

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[Text] Losses in cattle breeding are a separate problem. Three fields of activity can be mentioned in this regard. The first are losses caused by the lack of diligence in handling cattle or lack of the necessary knowledge and experience by the farmers. Reducing loss of cattle and improving the condition of the cattle (for example, through eliminating glaring mistakes in feeding and improving veterinary care) can bring benefits. These are relatively accessible reserves which can be tapped without major capital outlays.

The second field of activity concerns an improvement of the coefficient of converting fodder into animal products. This is a more complex problem. The effects in this sphere depend on a set of measures, including improvements in fodder quality, on-schedule fodder delivery, adjustment of fodder mixes to the needs of particular animals, selection in the herd with an eye to improving herd quality, skills of producers and many other factors. In the 1970s, the development in this sphere was unfavorable. Fodder input per unit of animal products was high and kept growing. In the years 1971-1975, 7.67 grain units in fodder were consumed per unit of convertible animal products, whereas in the following 5 years this rationincreased to 7.71.

The program of development for agriculture and the food industry in the years 1981-1985 elaborated by the Ministry of Agriculture and Food Economy, envisages an improvement of the conversion coefficient to 2.7 percent and by 4.7 percent by 1990. These are estimates for a more distant future. Substantial benefits can be obtained now. If only a segment of the least efficient production units in each sector of agriculture ceased production (which the new economic conditions will force them to do) or improved the efficiency of feeding by as little as several percent, an overall improvement in feeding efficiency by between 1.0 and 1.5 percent can be achieved in agriculture as a whole. This translates into 80,000 and 100,000 tons of convertible meat. This estimate takes no account of opportunities for fodder reallocation which should be a result of the natural division of labor.

The third field of activity concerns structural changes in animal husbandry, i.e., the choice of production profiles better suited to the domestic fodder base. The advance gained in this field over the last years has not been

encouraging. We have opted for a model of developing animal husbandry on the basis of grain-intensive technologies, similarly to the situation in highly developed capitalist countries. In their case, this is justified because grain yields are high. In Poland, with its high share of class 5 and class 6 soils, it will be difficult to attain a level of yields which can justify grain-intensive technologies in cattle breeding. Under these circumstances, a need, a necessity even, of a change in the development strategy should be considered. Production based on nongrain fodder, mainly potatoes, should be given preference. The natural conditions of Poland are conducive to a grain-saving model of cattle breeding. The volume of production per unit of area must be the decisive criterion in selecting the structure of production. Proceeding from these assumptions, the need to reduce meat production on the basis of fodder grown on developed farm acreage age should be considered (this is the most land-intensive kind of production). On the other hand, preferences should be granted to milk production, which is the most inexpensive source of animal protein.

Structural Error

Prices must be the main lever influencing structural changes. They must eliminate modes of production where efficiency is low. If prices become genuine parameters—and the latest reform has created conditions for that—producers themselves will make a choice according to the requirements of rationality and economic efficiency. If this turns out to be ineffective, prices should be changed rather than other means of economic policy substituted for prices. At present, patience should be used. New economic conditions should be allowed to work in accordance with their internal logic. Only after a certain time should a price correction be introduced if it turns out that processes of adaptation are not developing as forecast. The current price system provides an opportunity to set in motion processes of adaptation facilitating higher efficiency and less reductions. This, however, must be a natural process, as is required by the spirit of economic reform.

How much can be achieved in animal husbandry in the short run? No precise answer to this question can be given at present, because losses due to particular factors are not known. In the long term, the most can be achieved in milk production, but, unfortunately, not without investment. Losses of milk are great, and great at all stages of production, transportation, processing and distribution. Nobody as yet has estimated these losses precisely. Reducing these losses, however, calls for investment outlays. Specifically, milk-producing farms should be modernized, the volume of production and sales should be increased, and, therefore, certain specialization in the field should be introduced. If you purchase milk from 2 million suppliers, you cannot expect high quality, and quality is the decisive factor when it comes to losses. Equipment systems of the Alfa Laval type are needed in milk production for milking, cooling, transportation and processing. It will be necessary to create a dense network of small dairy plants to supplement the giants built so far. Many organisational measures aimed at raising efficiency in milk management should be undertaken. Failure to do this will cause us to use irretrievably large quantities of ver-

valuable protein which we must obtain on remote ocean waters or purchase abroad in order to supplement the market. This protein is produced in the country in sufficient quantities. Surely, increasing milk production should also be contemplated. However, utilizing what milk is already being produced is the most important issue, at least for now.

In other modes of animal husbandry, results may be easier to achieve. Abandoning the most expensive production, which is inefficient at current prices, by some PGR and collective farms will be a source of considerable savings. But the lost product will have to be produced somewhere. The ones whose production is profitable must do it. No means of economic policy should be used to stimulate unprofitable production. It can be expected that with the current price arrangements animal husbandry will be profitable for farmers who have their own, relatively inexpensive fodder. Especially, it should be expected that small farms which have a certain fodder stock and relatively plentiful labor supply will produce more actively due to the growth of retail feed prices. This will make it possible to reduce losses of some kinds of fodder and increase meat production.

If the expected reallocation of fodder to the more inexpensive producers really occurs (the new price arrangement should facilitate this) and if the most expensive producers cease production in a natural way, animal production could be increased in a relatively short time by between 450,000 and 630,000 tons of convertible meat, or by between 7 and 10 percent of the envisaged 1985 production level. (This holds if the above-mentioned estimates of avoidable losses in crop production are figured in). This translates into an increase of per capita convertible meat consumption by between 13 and 18 kilograms annually. (Convertible meat means all kinds of animal food products recalculated into meat on the basis of conventional conversion factors).

This, however, will not happen without investment. Implementing the above-outlined program of savings requires capital investments into streamlining production processes and creating economic mechanisms capable of eliminating inefficient producers.

The last (if at all) elements of agricultural services is tremendously important for reducing losses. The amount of losses the farmer and the entire society incur depends on the timing and dependability of services. An arrangement must be set up whereby low-quality work of agricultural service facilities will not be granted social acceptance and will not be paid for. The same applies to the sphere of processing and distributing manufactured products. Losses incurred in each further link of producing the finished product are increasingly expensive, because labor expended at all previous stages of production is wasted. From this point of view, losses of manufactured foodstuffs in distribution and households hit society the hardest. This plundering must be the first to be eliminated.

Processing

Possibilities for increasing the volume of manufactured foodstuffs by increasing processing in the food industry are not yet known. Despite the

technological and investment boom of the last decade, the food industry in Poland is still at a low level of development. Its market assortment is still very poor (when it comes to the array of products prepared from the primary agricultural raw material). The quality of products is low, whereas the cost of processing, measured by cumulative social costs, is high. As the balances of intersectorial flows published by GUS (Central Office of Statistics) show, by the end of the 1970s, coefficients of cumulative consumption of agricultural products in foodstuffs processing approximated or even exceeded par. This means that particular branches of the food industry and sectors cooperating with them consumed approximately a unit of agricultural production to turn out a unit of finished product. Besides, the levels of aggregate asset intensiveness of production in particular branches of the food industry are very high in Poland. In several cases, these levels approximated the level of power generation, and in the cases of the dairy and sugar industries, even exceeded it. In light of the tables of intersectorial flows, coefficients of cumulative labor intensiveness in the food industry are the highest in the entire economy (outside agriculture).

Coefficients of import intensiveness of the production of food industry are also high, which points up direct and indirect consumption of natural gas, oil, plant products and so on in producing the unit of a final food product. Per million zlotys' worth of final production in the food industry, by the end of the 1970s, imported liquid and gaseous fuels worth more than 20,000 zlotys and chemical products (including chemical minerals) worth about 30,000 zlotys were used. More than 60,000 zlotys' worth of domestic energy carriers and products of the domestic chemical industry worth 66,000 zlotys, should also be enumerated. At the same time, in order to produce 1 million zlotys' worth of final product, plant products worth between 60,000 and 80,000 zlotys had to be imported, and in the milling and the macaroni industries, products worth as much as 437,000 zlotys. This was a consequence of basing food processing to a considerable degree on imported raw materials.

Some reservations should be made concerning the prospects for keeping these development proportions in the future. Especially, questions about the social efficiency of agricultural and food processing should be posed. Let us use the meat industry as an example to highlight the issue. This industry is one of the most important and, at the same time, fairly representative. At the end of the 1970s, in order to produce 1 million zlotys' worth of final product in this industry, 1.2 million zlotys' worth of animal products had to be used directly and indirectly, as well as domestic energy products worth of 60,000 zlotys, imported energy products worth 24,000 zlotys, domestic chemical products for 66,000 zlotys and imported chemical products for 30,000 zlotys. The recent price reform could change these proportions, but so far it is not known to what extent. (Prices of all items in outlays and final products have changed). We do not expect these changes to be significant. If it is so, the problem presented above remains acute and important. The question concerning the ways to produce more final foodstuffs from a unit of agricultural raw materials still remains unanswered. Improving processing coefficients is not only a prerequisite for the profitability of particular food industry enterprises under an economic reform, but a condition for rapid improvement in food supplies in the market.

In recent years, we have embarked, in accordance with foreign models, on upgrading foodstuffs, that is, developing industrially processed foods that require specialized and expensive unit packaging and so on. Let us ignore the issue of whether highly processed foods are the best from the nutritional point of view (some experts think that a high degree of processing is accompanied by a considerable loss of nutrients valuable for the human organism, a loss which has to be made up subsequently). Our current situation places on our agenda the issue of the feasibility of shifting emphasis to foodstuffs prepared inside the household to a larger degree than the case has been so far. To be sure, this solution is not without drawbacks, but for the time being it can bring substantial benefits and reduce the losses which unavoidably occur in the food industry. Also, we think that this is the way for healthier foods. Certainly, this cannot lead to food consumption in its raw form. This extreme solution will not be reasonable and will cause much harm. Only restrictions on the so-called high stages of food processing, and then only on a case-by-case basis should be considered. No universal solutions can be found in this sphere.

Regardless of the mode, place and degree of processing of agricultural raw materials we opt for, losses incurred today as a result of bad organization in managing these raw materials are high. Experts from the GDR estimate that, due to wasting raw materials and agricultural products, the member countries of CEMA lose, in the entire cycle of production, about 30 percent of meat products, 30 percent of poultry, 62 percent of fish, 25 percent of hen eggs, 27 percent of potatoes, 38 percent of vegetables and 18 percent of fruit. It is estimated that about 20 percent of the total amount of raw materials for the food industry is lost in CEMA countries due to improper storage.

Let Us Change the Consumption Model

The concept of achieving food self-sufficiency in Poland rests on three pillars: 1) growth of food production; 2) a marked reduction of losses in all elements of the food economy; 3) changes in the national model of nutrition.

In the most general terms, the shift in the model of nutrition should go in the direction of a more inexpensive diet with full provision for the needs of the human organism in necessary nutrients. There are opportunities for that. The nutritional level and model of the Polish society established in the 1970s was seen as adequate or, at any rate, fairly adequate by Polish and foreign experts alike and also by our society.

There are all objective prerequisites for keeping the consumption of all plant products at least at the level attained in the second half of the 1970s. This lies within the scope of the opportunities of Polish agriculture. Despite many difficulties, this even extends to vegetable fats. Our practice shows that whenever Polish agriculture produces rape in sufficient quantities, even the variety with high erucic acid content, there is an opportunity to sell it at an adequate profit and to purchase sweet vegetable oils for consumption.

The situation in animal husbandry is different. Meat and egg production must decrease in the absence of additional grain and fodder imports. At the same time, milk production does not have to decrease.

Whereas in the years 1976-1980 net imports of grain and fodder per capita amounted to about 200 kilograms of grain units per capita, in the years 1982-1985 these imports can be eliminated entirely, or almost entirely. The elimination of imports can reduce combined annual consumption of meat and eggs by about 20 kilograms per capita. Whereas in the years 1976-1980 combined per capita production of meat, eggs and fish exceeded 85 kilograms per capita and was approximating 90 kilograms, in the years 1981-1985, in the case of total or almost total elimination of imports, combined production may fluctuate within the range of 65 to 70 kilograms of meat, eggs and fish per capita.

With no grain imports, the following quantities of meat protein carriers per capita would be available: between 65 and 70 kilograms of meat, eggs and fish and about 280 kilograms of milk. The average content of animal protein in meat, eggs and fish can be estimated to be 12 percent, whereas in milk--about 3.1 percent. Therefore, combined annual intake of protein in animal raw materials per capita would amount to 16,500-17,000 grams, or 45 to 47 grams daily.

From the point of view of protein content, nutrition is rational if it meets the nutritional requirement of 80 to 90 grams of plant and animal protein combined. Animal protein should account for one-third of the total protein intake for adults and one-half for other population groups. Taking this assumption into consideration, we can ascertain that the above-outlined forecast of providing meat, eggs, fish and milk for the population may turn out to be adequate on the condition that a relatively rational distribution of consumption of these items is ensured and also that losses of animal protein in processing do not turn out to be excessively large.

A reduction in the combined production of meat, eggs and fish does not pose a threat of biological malnutrition for the population. However, it must be compensated for by increased supply of plant products with high protein content, for example, seeds of leguminous plants, baked goods with a higher plant protein content and some protein-rich vegetables. As a matter of fact, this reduction of meat, egg and fish consumption has already occurred. However, its replacement by plant protein has not been ensured so far. This should be recognized as a threat.

A reduction in the consumption of protein-rich products in the longer run may give rise to apprehensions that these products will become the hardest hit for the lowest-income families, including mainly families with many children. This may happen to about 10 percent of the blue-collar families, who are treated in GUS analyses as living below a certain social minimum, the latter being a 1977 controversial convention. This also concerns about 10 percent of families, mainly with many children, drawing their income from agriculture or earning mixed incomes. This aspect should be treated with exceptional care.

There is a need to make special research into consumption levels of various population groups every so many years. The current information is generated as somewhat of a byproduct of the family budget studies. It is desirable that studies be carried out periodically not of the structure of expenses in family budgets, but rather with an eye to defining how rational the nutrition patterns are and to what degree they provide conditions for the normal development of all social groups.

How to manage with Less Animal Products

If all the programs of improving the national diet so far, an increase in consumption of animal products has been the mainstay. Developing such a program for the 1980s would be without realistic foundations. Maximizing meat consumption leads to a more expensive diet. The production of 1 gram of animal protein must be preceded by the consumption of 5 to 8 grams of plant protein. Similar conversion ratios are characteristic of food energy carriers. Conversion ratios of plant into animal products are low not only due to the laws of nature which govern metabolism in this sphere, but also due to a chain of shortcomings and drawbacks in the technology of this conversion. In this case, we are talking about the shortcomings and drawbacks which cannot be rectified over a period of months, but rather a period of several years would be needed.

Therefore, nutritional programs for the 1980s, especially for the first half of this decade, cannot be based on the idea of maximizing the consumption of meat and meat products. They can rather be based on the concept of ensuring normal psychophysiological development of the nation, including all of its social groups, in the conditions of food self-sufficiency of the country. Reducing social costs of nutrition appears to be the main pillar of nutritional programs

The nutritional policy must facilitate overcoming the crisis in the country through eliminating dangers in the nutritional sphere. Specifically, it should envisage the following:

--Measures to stabilize meat, egg and fish consumption at a level of 65 to 70 kilograms per capita annually. To this end, it is necessary to set up a distribution system which would ensure equal access to these products for various groups in the populace.

If grain and fodder imports are limited or altogether eliminated, limiting the lack of protein in fodder would become a prerequisite for achieving this level of production. As one of the alternatives, importing fodder concentrates in exchange for exporting meat should be assumed.

--Fixing the volume of hog production at a level which will make it possible to procure about 6 or 7 million tons of grain annually. In such a case, hog herds will decrease considerably.

--Priority state for keeping up the consumption of milk at a level of between 180 and 200 liters a year. Per unit of protein in milk, 2 to 3 times

less fodder is used than per unit of protein in meat. This favorable conversion ratio also holds for fats, vitamins and digestable mineral salts.

--Setting targets with a goal of at least 10-fold growth in the production of rabbit and other small animal meat over the next 5 years on farms which have marginal fodder resources for this kind of auxiliary production. Along with geese, rabbits exhibit the highest ability among all animals to process fodder with high cellulose content into meat. They also have the highest coefficient of multiplication. They present a chance to start animal production for the users of 1 million agricultural plots which do not engage in animal husbandry.

--A study of opportunities to produce live horses and horsemeat for exports as a source of providing concentrated fodder.

--Creating conditions for an abundance of plant products for direct consumption. This would be a condition for food security in the environment of limited meat supply. Along with grain products, there should be abundant market supplies of potatoes and potato products, vegetables and fruits. There are no objective conditions for recurrent difficulties and shortages in the market with regard to these goods. Concessions should be granted to all those who want to engage in market sales of such products as potatoes, vegetables, fruits etc.

--Granting priority status to the production and sales of leguminous seeds for consumption as "vegetable meat." Leguminous seeds, along with protein-rich baked goods, must make up for the loss of protein associated with a decrease in meat consumption. Deliveries of leguminous seeds can and should substitute for protein contained in about 10 kilograms of meat. This magnitude of consumption of leguminous seeds is justified in light of the science of nutrition.

--Concentrating on increasing production of oleaginous plants as a source of vegetable fat supply. If further difficulties are encountered in producing rape free of erucic acid and triglycerides, it will be necessary to treat the seeds of this plant as a source of foreign-exchange funds for purchasing raw materials needed to produce sweet oils.

--Keeping all current preferences for sugar beet and sugar production. We should strive to cancel sugar rationing as soon as possible.

--Creating conditions for utilizing all vegetable greenhouses and winter-growing cellars. The production of greenhouse vegetables in winter should be treated as a source of vitamins and mineral salts, but also as a way to accommodate the tendencies of certain groups in the populace to consume gourmet foods, which are manifested under any circumstances. Luxury in nutrition has always been expressed mainly in meat consumption. These tendencies should also be allowed to manifest themselves in other fields.

5. Economic Conditions

According to findings of the science of nutrition, the human organism requires at least 40 nutrients. The science, however, has established quantified requirements for merely a dozen of the nutrients the human organism needs. It is still not in a position to prescribe definitive and precise nutritional recommendations. It makes use of many estimates. The science recommends the largest possible variety of foods.

The science has created the notion of consumption norms and nutritional norms. Consumption norms approximate physiological needs of the human organism, though they are much higher than the minimal need of man. However, no permanent law exists which makes it possible to assess how much a consumption norm is higher than the minimal requirement of human organism. In determining a consumption norm, scientists take various circumstances into consideration, for example, the rate at which nutrients in various ingredients are broken down. For example, the consumption norm of vitamin C is a full 30 percent higher than the minimal requirement of the organism, because this nutrient decays easily in the process of cooking food.

Nutritional norms are much higher than consumption norms. They define the need for nutrients contained in marketed foodstuffs. In other words, the losses of nutrients which occur in processing raw foods, defined empirically under average conditions, are figured into these norms. Unskillful processing can increase these losses excessively and reduce the content of nutrients in meals, and the reverse is also true. Processing in accordance with the rules of the art of meal preparation can make a great impact on preventing undesirable decay of nutrients.

It is impossible to state unambiguously that some rules of nutrition are more important than others. There is a certain balance of goals. Preserving a balanced consumption of the three groups of food items which are the sources of energy for the human organism, namely, fats, proteins and hydrocarbons, is the goal that particular emphasis has been laid on recently in the world literature. Research results allow us to state that about 30 percent of the energy needed to sustain the life of a human should be drawn from fats, largely vegetable fats, 15 percent of energy from proteins and about 55 percent from hydrocarbons (including sugar, the share of which in the total energy intake of man should not exceed 10 percent).

Recent results of research on improving human nutrition suggest that the recommendation be stressed to the effect that a person should take in as much energy in the form of food as he expends. All accumulation of energy in the form of fat depositing is viewed as harmful.

In the most affluent countries, where much meat and meat products have been consumed for many years, the necessity is now being stressed to limit this consumption and, moreover, to drastically increase the share of hydrocarbons in the diet of the population. The famous report of U.S. Senator McGovern suggests that as little as 15 or 20 percent of the total energy the person needs be drawn from hydrocarbons, recommending, however, that sugar consumption should be reduced to 10 percent of the energy needed.

The same report recommends that protein consumption supplies only 22 percent of the energy person needs in the course of one day. This means that a white-collar worker who expends 1,600 kilocalories a day should consume items with a protein content not higher than 40 grams. A miner, who expends 2,000 kilocalories a day should consume no more than about 170 grams of protein in animal and vegetable products (including about 40 grams of animal protein). Recommendations appear with increasing frequency to the effect that consumption of fats in general should be reduced and especially of animal fats, including butter as the product with high cholesterol content. Cholesterol is considered to be a compound which promotes sclerosis.

In summation, it can be stated that research results, while stressing the need to avoid one-sidedness in consumption, ascertain the need to maintain a firm predominance of vegetable over animal products in total consumption.

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RESULTS OF RECENT LIVESTOCK INVENTORIES ASSESSED

January 1981 inventories

Warszawa KADRA NARODOWA WYDARZENIA ADMINISTRACJAA in Polish No 4, 22 Mar 82
pp 20-21

[Article by Wiesław Mlynarszyc: "The Population of Farm Animals"]

(Text) The official census of farm stock carried out by the Chief Central Statistical Office on private farms according to the condition of 2 January 1981, as well as reported data from socialized farms, showed a tendency toward a rebuilding of the stock. For agriculture as a whole, farm stock at the end of 1981 showed, compared with the same period in 1980, a growth in cattle by 1.2 percent, in which cows increased by 0.7 percent, bulls by 1.7 percent, in which steers increased by 3.3 percent, and geldings by 8.1 percent.

The recorded growth in the number of cattle and bulls does not, however, modify the effects of the previously maintained tendency to limit the raising of farm animals. The recorded number of stock at the end of 1981 is, in comparison with the highest December total of the last 10 years, namely 1974, lower in the case of cattle by 0.3 million head, that is, by 18.3 percent, and in the case of bulls, by 0.7 million head, that is, by 12.2 percent.

It should be emphasized, however, that by sector, the tendency toward the rebuilding of farm stock was seen only in the non-socialized economy.

The increase in stock noted at the end of 1981, in comparison with the same period in 1980, in the non-socialized economy, is very significant, amounting to 7.0 percent for cattle and 1.1 percent for bulls.

On socialized farms, however, at the end of 1981, in comparison with the end of 1980, the severe decrease in the number of farm stock continued, amounting to 14 percent for cattle and 18.1 percent for bulls. As a result of the continued decrease in stock, notwithstanding that there is at present a basic emphasis on breeding in this sector than in the non-socialized economy, which is expressed by the smaller number of stock per 100 hectares of cropland. Currently, on socialized farms, in comparison with the non-socialized economy, the cattle stock is smaller by 0.6 head per 100 hectares of cropland (37.2 head and 107.1 head), while at the end of 1981, uncollected farms were

characterized by a generally higher incidence of breeding farm animals than on non-socialized farms, and until June of 1981, by a higher incidence of hog breeding.

Cattle Population - A Clear Tendency Toward Growth

The growth in the cattle population in all of agriculture at the end of 1981, in relation to the end of 1980, was a result of a considerable increase in the cattle population in the non-socialized economy, by 0.7 percent with a simultaneous severe decline in this population in the socialized economy. In the framework of the socialized economy, the most severe decline in the cattle population, in relation to the previous year, was in agricultural circles - by 58.4 percent.

The number of cows in all of agriculture at the end of 1981, in comparison with the same period of the previous year, was 0.7 percent higher as a result of an increase in the number of cows in the non-socialized economy by 2.3 percent, with a simultaneous decline of this population in the socialized economy by 8.8 percent.

The noted increase in the number of cows in the non-socialized economy is a consequence of a lesser shortage of cows in the fourth quarter of last year and of the limited allocation of cows for purchase. On the average, in the fourth quarter of 1981, purchase of cows was 48.1 percent lower than the purchase of cows in the same period in 1980.

On the basis of the growth rate of the cow population in the non-socialized economy, it can be concluded that the farmers' attitude toward increasing cattle breeding is clear.

On the basis of area, the tendency towards growth in cattle breeding does not have a universal character. The increase in the cattle population was noted in only 33 voivodships, and the scale of this growth is shown in the following table:

<u>Less Than 2 Percent</u>	<u>2-5 Percent</u>	<u>5-7 Percent</u>	<u>Over 7 Percent</u>
Bielsko-Biala	Warsaw	Kielce	Bialystok
Chelm	Bielsk Podlaski	Konin	Lomza
Katowice	Bydgoszcz	Lodz	Radom
Plock	Ciechanow	Wloclaw	Siedlce
Przemysl	Czestochowa		Torun
Walbrzych	Kalisz		
	Krakow (Cracow)		
	Lublin		
	Nowy Sacz		
	Ostroleka		
	Piotrkow		
	Rzeszow		
	Sieradz		
	Skierniewice		
	Suwalki		
	Tarnobrzeg		
	Tarnow		
	Zamosc		

In the remaining 16 voivodships, there was a decline in the cattle population at the end of 1981 relative to the end of 1980, in the following scale:

<u>Less Than 2 Percent</u>	<u>2-5 Percent</u>	<u>5-10 Percent</u>	<u>Over 10 Percent</u>
Gdansk	Elblag	Koszalin	Gorzow
Jelenia Gora	Legnica	Slupsk	Szczecin
Krosno	Pila	Wroclaw	Zielona Gora
Leszno	Poznan		
Olsztyn			
Opole			

The decline in the number of cattle in part of the above mentioned voivodships is hard to justify on the basis of feed shortages considering the highly intensive cattle breeding. This refers to all voivodships in which there was a decline in the number of cattle by more than 5 percent, despite the fact that the cattle population did not exceed 65 head per 100 hectares of cropland in any of these voivodships. At present, the intensity of cattle breeding is, on the basis of area, highly variable. The cattle population per 100 hectares of cropland at the end of 1981 in individual voivodships is presented in the following table:

<u>Less than 55 head</u>	<u>55-65 head</u>	<u>65-75 head</u>	<u>Over 75 head</u>
Warsaw	Bydgoszcz	Elblag	Bielsko Bialo
Bielsk Podlaski	Ciechanow	Kalisz	Leszno
Bialystok	Czestochowa	Krakow	Nowy Sacz
Chelm	Gorzow	Krosno	Opole
Gdansk	Helenia Gora	Legnica	
Konin	Katowice	Poznan	
Ostroleka	Kielce	Rzeszow	
Pila	Koszalin	Sieradz	
Radom	Lublin	Tarnow	
Slupsk	Lodz	Torun	
	Lomza		
	Olsztyn		
	Piotrkow		
	Plock		
	Przemysl		
	Siedlce		
	Skierewice		
	Suwalki		
	Szczecin		
	Tarnobrzeg		
	Walbrzych		
	Wloclaw		
	Wroclaw		
	Zamosc		
	Zielona Gora		

Hog Population - Unjustified Disproportions Between Voivodships

The increase in hogs in all of agriculture at the end of 1981, in comparison with the end of 1980, by 1.9 percent, was attained thanks to a considerable growth in the number of hogs in the non-socialized economy, by 10.5 percent, with a simultaneous severe decline of this population in the socialized economy, by 18.2 percent.

In the hog population in general, there was an increase in the population of piglets less than 3 months old, by 491.8 thousand head, that is, by 9.3 percent, in the population of gilts for breeding by 170.3 thousand head, that is, by 8.3 percent, and in the population of porkers by 674.6 thousand head, that is, by 14.1 percent, with a simultaneous decline in the population of shoats, by 15 percent.

The increase in the piglet population in the non-socialized economy of 13.1 percent, with a simultaneous decline in this population in the socialized economy, by 3.1 percent, is a result of the stance of the private farmers on increasing breeding of hogs on the basis of the good potato yields of the past year, and of the reduction in purchases of piglets and shoats by the socialized sector. In the first quarter of 1981, socialized farms bought directly from private farms only about 320,000 head of piglets and shoats, that is, about 70 percent fewer than in the fourth quarter of 1980.

The rising costs of piglets in the last months of 1981 in free market trade between farmers assured a high profitability in raising piglets and caused an increase in the rate of covering gilts (in the fourth quarter of last year, 19.7 percent more gilts were covered than in the fourth quarter of 1980) which as a result caused an increase in the population of gilts for breeding in the non-socialized economy at the end of 1981, by 13.9 percent, in relation to the same period the previous year.

The population of shoats, limiting the marketable commodity production of slaughter hogs at the midpoint of last year, showed in all of agriculture at the end of 1981, compared to the end of the previous year, a decline of about 989.4 thousand head, or 15 percent. At mid-year of 1982, we can expect an interim decline in the supply of slaughter hogs for procurement. It should be stressed that the decline in the population of shoats at the end of 1981 is a result of the decline in the hog population shown in the June, 1981, census, which was caused by both the limited supplies of fodder from the 1980 harvest and by the low profitability of breeding hogs up to the time of the introduction of new prices in June of last year.

The population of porkers, limiting supplies of slaughter livestock for purchase in the next months, showed, on private farms - as a result of the delay in deliveries for purchase of hogs in the fall of last year - at the end of 1981, as compared to the same period of the previous year, an increase by 1168.6 thousand head, or 41.9 percent. This increase modifies to a considerable degree the severe decline in the population of porkers in the socialized economy. The population of porkers in this sector at the end of 1981, in comparison with the end of 1980, was lower by 23.7 percent.

The periodic withholding by private farmers of porkers in the second half of last year assures, therefore, the possibility of an increased supply of slaughter hogs in the first months of this year, this also a result of the higher unit weight of the withheld animals.

By area, changes in the hog production at the end of 1981, in comparison with the end of 1980, show considerable divergence. An increase in the hog population was noted in 29 voivodships in the amounts shown in the following table:

<u>Less than 5 Percent</u>	<u>5-10 Percent</u>	<u>Over 10 Percent</u>
Warsaw	Jelenia Gora	Kielce
Bialystok	Lublin	Konin
Bielsk Podlaski	Piotrkow	Krosno
Bielsko Biala	Plock	Lodz
Bydgoszcz	Poznan	Lomza
Ciechanow	Rzeszow	Radom
Czestochowa	Siedlce	Skierkiewice
Krakow	Sieradz	Tarnobrzeg
Nowy Sacz	Walbrzych	
Ostroleka	Wloclaw	
Pila		

In the remaining 20 voivodships, however, there was a decline in the hog population. The scale of this decline was considerably varied and appeared as follows:

<u>Less than 5 Percent</u>	<u>5-10 Percent</u>	<u>Over 10 Percent</u>
Elblag	Chelm	Olsztyn
Gorzow	Gdansk	Przemysl
Kalisz	Katowice	Szczecin
Koszalin	Wloclaw	
Legnica		
Leszno		
Opole		
Slupsk		
Suwalki		
Tarnow		
Torun		
Zamosc		
Zielona Gora		

Notable is the fact that in area, the decline in the hog population occurred mainly in the voivodships with a concentration of socialized farms which at present are getting away from hog raising. Considering that at the same time, the part of the voivodships in which a decline in hogs was noted was characterized also by a considerable decline in the cow population, this situation can be evaluated as a departure from raising farm animals which is not a consequence of available fodder resources. This concerns, for example, Elblag, Gorzow, Olsztyn, and Slupsk voivodships in which at the same time, the current number

of hogs per 100 hectares of cropland is lower than the national average. According to the data for the end of 1981, the population of hogs in individual voivodships appears as follows:

<u>Less than 70</u>	<u>70-100</u>	<u>100-130</u>	<u>Over 130</u>
Cheim	Warsaw	Bielsk Podlaski	Bydgoszcz
Jelenia Gora	Bialystok	Gdansk	Kalisz
Krosno	Bielsko Biala	Gorzow	Leszno
Nowy Sacz	Ciechanow	Konin	Pila
Przemysl	Czestochowa	Koszalin	Poznan
Tarrobrzeg	Elblag	Legnica	
Walbrzych	Katowice	Lublin	
Zamosc	Kielce	Lomza	
	Krakow	Lodz	
	Olsztyn	Opole	
	Ostroleka	Plock	
	Piotrkow	Siedlce	
	Radom	Skiermiewice	
	Rzeszow	Szczecin	
	Sieradz	Torun	
	Slupsk	Wloclaw	
	Suwalki	Zielona Gora	
	Tarnow		
	Wroclaw		

Large disproportions between voivodships in the intensity of hog breeding, expressed by a difference of more than 65 head per 100 hectares of cropland, indicate the possibility of intensifying hog breeding in almost every other voivodship, under the condition that there is an increase in the yields of the basic crops, mainly grains, as well as an increase in the construction of farm buildings.

April 1982 Inventory

Warsaw ZYCIE GOSPODARCZE in Polish No 17, 16 May 82 p 4

[Article by M. Mak.: "Breeding Prospects"]

[Text] The animal census, which was conducted by the Chief Central Statistical Office in June, and observation of other production phenomena, prove that the present situation in breeding has changed quite significantly, in comparison with previous months. The stabilization of production conditions is the major cause of these changes.

The purchase prices were established for a long period - to July, 1983; farmers already know that they will not be able to count on supplies of nutritional fodder from the state and must make their breeding plans on the basis of their own fodder production. There has been, however, a certain improvement in the supply of coal. These are factors which necessitate a reorientation of production focus on some farms, and which at the same time assure greater stability of production. Now, one does not see the same

instability in the economic situation as in the last year, caused by the several increases in purchase prices, the collapse of the fodder market, and difficulties with supply of other means of production (above all such an important necessity for hog breeding as coal). Breeding, because of its long cycle, requires stable conditions. In making production decisions, farmers must know what they can count on for several months, for a year, and adjust their plans accordingly.

The April census showed that on private farms, in hog production, the process of rebuilding the population, begun in the second half of 1981, was continued. Altogether, in non-socialized agriculture, there were 15.2 million head of pigs, 10 percent more than 1 year earlier (for comparison: in 1976, there were 17.9 million, in 1980, 16.4 million). The growth of the population by 1 1/2 million head in a one-year span can be attributed mainly to the increase in the number of piglets (by 19.5 percent) and this in turn resulted from the fall placement in pens of a greater number of sows. But now the situation has already changed. The growth index of the gilt population was, in April, lower (growth of 6.2 percent) than in January (12.2 percent).

The weakening of growth trends, which have been fairly strong, is supported by other production and market data. The number of covered sows is gradually decreasing, while the supply of sows for purchase is increasing. Poorly understood fluctuations in prices occurred in the piglet market. Prices are still high but they have started to fall (in January, the average price was almost 3,300 zlotys for one head, in March, 2,926 zlotys, with great regional fluctuations - the highest prices in January amounted to 4,600 zlotys for one piglet, and in March 3,700 zlotys). Usually, prices of piglets rise gradually to the end of May-beginning of June. This year, they broke much earlier, which denotes a gradual saturation of the market. At present, we have a million piglets more than 1 year ago, and the buyers of considerable quantities of them to date, namely the socialized farms, have withdrawn.

The decline in prices and the worsening economic situation for piglets must in the future lead to an already visible decrease in the number of sows, and to a subsequent regression in the whole population. For now, though, there are no special concerns that the piglets supplied to the market will be wasted. There still are buyers (there is an increasing interest in breeding among smaller farmers) and there still has not been need of intervention anywhere to start forced deliveries. A certain easing of excess supply will come also from interregional trade, conducted by licensed private middlemen. There are also fairly considerable regional differences in the growth rate of breeding.

The strongest growth trends occurred in the eastern and central voivodships, however, there has been observed a tendency to decline in the western and northern voivodships (especially in Wroclaw, Legnica, Leszno, Zielona Gora, Szczecin, Gdansk and Elblag voivodships). Hog breeding private farms in these regions were characterized in previous years by a greater concentration of production, large purchases of fodder from state supplies, and by strong co-production unions with socialist farms. The shortage of fodder and the breaking of cooperative ties have negatively influenced production trends in this group of farms. There was, however, a growth in production where there were

more small farms raising hogs mainly on their own fodder. It is worth recalling that in these regions, fodder supplies from the state as a rule covered only 40-60 percent of the need defined by the norms for farmers for the sale of slaughter animals.

To the questions of what the future will bring, and what trends will prevail, there are still no answers today. It is known that the possibilities of motivating the decisions of farmers are very limited. The fodder market is empty, and purchase prices have already been raised. One can count, therefore, only on the effects of a profitable appraisal of farms' own situation (with fodder, for example) and on a positive evaluation of long term production prospects for the private farmer.

For now, only the situation relative to purchasing has been settled. In April, it was already lower than in March - this concerns supplies from all of agriculture. Developing similarly is the situation in May and June, as well as in the third quarter. In the last 3 months of this year, however, there will be an increase in supplies.

The total population (in all of agriculture there was an increase, in relation to April, 1981, by 5.5 percent, to a total number of 19.8 million head) as well as the level of purchase was influenced by the decrease in the number of animals on socialized farms, which most seriously felt the drastic drop in fodder allocations. This undercut above all those farms on which production was based on supplies from outside sources. One more interesting phenomenon should be noted. The trends in production are not adequate with very decreased fodder supplies. This is proven by the fact that the more modest resources are better utilized and farms are adjusting gradually to the new fodder situation.

The results of the April census showed that cattle breeding on private farms is still in a growth phase (a growth in population of 5.1 percent in comparison with the previous year). In socialized agriculture, however, the population has continued to decline, although at a much slower rate than in the previous quarter.

In comparison with previous years (for example 1975, when the number of cattle on private farms was the highest) the population at present is about one million head less. Now, there are somewhat more than 1 year ago (by 1.2 percent), 5 million in total, but fewer than in 1980 (5,077 thousand head) and in 1976 (5,450 thousand head). According to the opinions of specialists, we will not reach such high numbers as several years ago, although some increase should still occur. This is confirmed by the direction of certain production processes on farms. A gradual concentration of herds is occurring - the number of farms where there is more than three cows is growing, and the total number of cows on bigger farms, with an area of more than ten hectares, has also been rising. One also observes a return to raising milk cows on small farms. Once again, family cows are appearing, utilized above all for the needs of the farm household.

Cows command a high price on the market, too. The records of the Chief Central Statistical Office showed that their average price in March amounted to

55,000 zlotys (in January, 52,000 zlotys) and this was 70 percent higher than 1 year ago. In January and February, there also was a large demand for heifers for breeding and utility; in March, the demand was slightly less but prices remained high (28,000 zlotys on the average).

Enterprises engaged in the trade of breeding animals, and Central Meat have made great efforts to buy (236,000 head) and distribute large numbers of calves good for further breeding. This significantly influenced a decrease in farm slaughter (126,000 head in the first quarter, 60 percent fewer than 1 year earlier). Also, other production data show that farmers are increasing the population of young cattle. This is a positive trend and if this year's fodder yields are good, in the second half of next, more slaughter cattle should make it to purchase.

We have a total of 11.7 million head of cattle in our agriculture, of which 5.7 million are cows (of this total, private farms have 9 million **head**, of which 5 million are **cows**).

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